## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.02.95 Test oil : ISO 4113

Combination No. : 0403246041

Injection pump

Pump designation : PES6MW100/720RS1522

EP type number : 0413206023

Governor

Governer design. : RQV300...1300MW148

: -2

Governer no. : 0420083323

Cust. part No. : 0250748902

Customer—spec. information Customer : MB—NFZ

Motor : OM366LA Power KW : 177.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. \*C : 40 Tolerance \*C : +- 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only : +- 0.10

Rack travel in mm: 21.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 14.40

Tolerance mm: +- 0.05

Del. quantity

cm3/1000 strokes : 133.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance		<b>▲</b>
		+ guide sleeve
cm3/1000 strokes	: 5.0	+ travel mm : 13.50
		+ Tolerance mm : +- 0.50
Check tolerance		
cm3/1000s.	: 8.0	
	. 3.3	+ GUIDE SLEEVE POSITION
2nd speed rpm	: 300	T GOIDE SELEVE FOSTITON
and speed ripin	. 500	Dottod arrand man . 1500
51 4	4.40	+ Rated speed rpm : 1500
Rack travel in mm		†
Tolerance mm	: ← 0.10	+ Rack travel in mm : 10.00
Del. quantity		+ Tolerance mm : +- 2.50
cm3/1000 strokes	: 12.0	+
Tolerance		
cm3/1000 strokes	: <del>+-</del> 2.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	2.00	TOTAL COND DECEMENT AT TOTAL COND OF O
cm3/1000s.	: +- 4.5	+ Rated speed rpm : 1300
	· <del>-</del> 4.5	
Spreed		+ Aneroid pressure
Tolerance		+ hPa : 1200
cm3/1000 strokes		+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 133.0
cm3/1000s.	: 4.0	+ Tolerance
		+ cm3/1000 strokes : +- 1.0
		+ Check tolerance
(B) SETTING OF IN	HECTTON DUMP	
	DECITON PUMP	
WITH GOVERNOR		+ Spreed
		† Tolerance
		+ cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAV	EL	+ Check tolerance
	<del></del>	+ cm3/1000s. : 8.0
Rated speed rpm	: 300	1
	. 500	T
guide sleeve	2 00	0.0750 0.0550
travel mm	: 0.92	+ RATED SPEED
Tolerance mm	: <b>+</b> 0.25	<b>†</b>
		+
Rated speed rpm	: 1355	+ control lever
guide sleeve		position degree : 120.0
travel mm	• 9 33	
travel mm	: 9.33 · + 0.25	tolerance degree : + 4.0
travel mm Tolerance mm	: 9.33 : +- 0.25	tolerance degree : + 4.0
travel mm Tolerance mm	: + 0.25	tolerance degree : + 4.0 rack travel mm : 13.40
travel mm Tolerance mm Rated speed rpm	: + 0.25	tolerance degree : + 4.0 rack travel mm : 13.40 Rated speed rpm : 1345
travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.25 : 1078	tolerance degree : + 4.0 rack travel mm : 13.40
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: + 0.25 : 1078 : 7.06	tolerance degree : + 4.0 rack travel mm : 13.40 Rated speed rpm : 1345
travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.25 : 1078	tolerance degree : + 4.0 rack travel mm : 13.40 Rated speed rpm : 1345
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: + 0.25 : 1078 : 7.06	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: + 0.25 : 1078 : 7.06	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.25 : 1078 : 7.06 : +- 0.25 : 514	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: +- 0.25 : 1078 : 7.06 : +- 0.25 : 514 : 2.14	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.25 : 1078 : 7.06 : +- 0.25 : 514	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: +- 0.25 : 1078 : 7.06 : +- 0.25 : 514 : 2.14	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm Rated speed rpm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : 2.47	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : 2.47 : + 0.25	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : 2.47	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : + 0.25 : 750	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever position degree : 74.0
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : 2.47 : + 0.25	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : 4.02	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever position degree : 74.0
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : + 0.25 : 750	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever position degree : 74.0 tolerance degree : + 4.0
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.25 : 1078 : 7.06 : + 0.25 : 514 : 2.14 : + 0.25 : 564 : 4.02	tolerance degree : + 4.0  rack travel mm : 13.40 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1495 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever position degree : 74.0

Rated speed rpm : 300 rack travel mm : 4.40 Tolerance mm : + 0.10  Rated speed rpm : 200	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 132.0 Tolerance
CRT mm min. : > 5.00	
TORQUE CONTROL	+ Spreed + Tolerance
Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : +- 0.05	+ cm3/1000 strokes : 6.0 + Check tolerance + cm3/1000s. : 9.0
Rated speed rpm : 750 rack travel mm : 14.40 Tolerance mm : + 0.10	Aneroid pressure  hPa : 1200 Rated speed rpm : 1300  Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST	cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance
SETTING	+ cm3/1000s. : +- 3.0 + Aneroid pressure
Rated speed rpm : 500 Pressure hPa : 1200 rack travel mm : 14.40 Tolerance mm : + 0.10	hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 46.0
MEASUREMENT	Tolerance : + 1.0 Check tolerance
Pressure hPa : - Rated speed rpm : 500 Tolerance mm : + 0.05	cm3/1000s. : + 3.0
Rated speed rpm : 500	DREAKAWAT
Pressure hPa : 800 rack travel mm : 5.30 Tolerance mm : + 0.10	Rack travel in mm: 13.40 Rated speed rpm: 1345 Tolerance 1/min: +- 5
Pressure hPa : 450 rack travel mm : 3.00 Tolerance mm : +- 0.10	+ STARTING FUEL DELIVERY
Toterance likit	Rated speed rpm : 100
START CUT-OUT	Del. quantity cm3/1000 strokes : 160.0
Rated speed rpm : > 100 Check	+ Tolerance + cm3/1000 strokes : +- 5.0
<pre>speed 1/min : &gt; 80 Rated speed rpm : &lt; 200 Check speed 1/min : &lt; 220</pre>	+ Check tolerance + cm3/1000s. : +- 8.0
FUEL DELIVERY CHARACTERISTICS	LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	4.40
Tolerance mm	: +-	0.10
Del. quantity		
cm3/1000 strokes	:	12.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1 <b>000</b> S.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.03.95 Test oil : ISO 4113

Combination No. : 0403276005

Injection pump

Pump designation : PES6MW100/720RS1517

: -3

EP type number : 0413206020

Governor

Governer design. : RSV350...1200MW0A355

Governer no. : 0420085228

Cust. part No. : 0250740102

Customer—spec. information Customer : MB-NFZ Motor : OM366LA Power KW : 100.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : +- 0.05

test only : + 0.10

Rack travel in mm: 21.00

Firing order : 1-5-3-6-2-

• /.

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance "NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.15 Tolerance mm : + 0.05

oterance mm : + 0.05

Del. quantity +	Tolerance
cm3/1000 strokes : 100.0	cm3/1000 strokes : +- 1.0
100.0	
Talanana T	Check tolerance
Tolerance	cm3/1000s. : +- 3.0
cm3/1000 strokes : + 1.0 +	Spreed
<del> </del>	Tolerance
Check tolerance	cm3/1000 strokes : 3.5
cm3/1000s. : + 3.0	Check tolerance
T 3.0	
	cm3/1000s. : 6.0
Spreed +	
Tolerance	
cm3/1000 strokes : 3.5 +	RATED SPEED
1	
Check tolerance	
cm3/1000s. : 6.0	control lever
· · · · · · · · · · · · · · · · · · ·	
<u> </u>	position degree : 96.0
2nd speed rpm : 350 +	tolerance degree : +- 4.0
+	
Rack travel in mm: 3.00	rack travel mm : 1.00
Tolerance mm : +- 0.30	Tolerance mm : + 0.70
Del. quantity	Rated speed rpm : 1400
cm3/1000 strokes : 12.0 +	
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : $\leftarrow$ 2.0 $+$	Rated speed rpm : 1315
Check tolerance	
cm3/1000s. : + 4.5	rack travel mm : 10.15
•	
Spreed +	Rated speed rpm : 1.5
Tolerance +	Tolerance 1/min : +- 5
cm $3/1000$ strokes : $3.5$	
Check tolerance	
cm3/1000s. : 5.5	LOW IDLE
· 5.5	LOW IDEL
T	
<b></b>	
(B) SETTING OF INJECTION PUMP +	control lever
WITH GOVERNOR +	position degree : 66.0
	tolerance degree : + 4.0
$\dot{f 1}$	toterance degree 4.0
T	Taskinas
ALLED TO ALL PROJECT DATA TO ALL PROJECT DE LA CONTRACTOR	Testing:
GUIDE SLEEVE POSITION +	
+	Rated speed rpm : 350
1	rack travel mm : 3.00
control lever	Tolerance mm : + 0.10
position degree : -3	
Rated speed rpm : 800	rack travel mm : 2.00
rated speed this . ODD	
†	Rated speed rpm : 390
Rack travel in mm : 0.50 +	Tolerance 1/min : +- 30
Tolerance mm : + 0.20 +	
	Rated speed rpm : 100
governor spring	The total oppose in the second
	CRT mm min. :> 19.00
pre-tension +	CRT mm min. : > 19.00
click setting $x$ : 4.50 $+$	
+	
<del></del>	TORQUE CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP	· · · · · · · · · · · · · · · · · · ·
And parts appropriate the course course	Rated speed rpm : 1200
Dated speed spm + 1200	rack travel mm : 11.15
Rated speed rpm : 1200 +	Cace Travel mm • 11 7%
Aneroid pressure +	Tolerance mm : +- 0.05
Aneroid pressure + 1000 +	
hPa : 1000 +	Tolerance mm : +- 0.05
hPa : 1000 + Del. quantity +	Tolerance mm : +- 0.05  Rated speed rpm : 750
hPa : 1000 +	Tolerance mm : +- 0.05

## ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm 500 Pressure hPa 1000 rack travel mm 11.15 Tolerance mm : + 0.10

## **MEASUREMENT**

Pressure hPa 500 Rated speed rpm rack travel mm 10.20 Tolerance mm 0.10

Rated speed rpm 500

380 Pressure hPa rack travel mm 10.90 Tolerance mm : + 0.10

300 Pressure hPa rack travel mm 10.50 Tolerance mm : + 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1000 hPa 750 Rated speed rpm Del. quantity cm3/1000 strokes : 94.0 Tolerance

cm3/1000 strokes 1.5

Check tolerance cm3/1000s.

4.0 Spreed

Tolerance

cm3/1000 strokes : 5.5 Check tolerance

cm3/1000s.

7.0

Aneroid pressure

hPa 500 Rated speed rpm Del. quantity

cm3/1000 strokes : 73.0

Tolerance

cm3/1000 strokes 1.0

Check tolerance

cm3/1000s. 3.0

## STARTING FUEL DELIVERY

Rated speed rpm 100 Del. quantity

cm3/1000 strokes :

120.0 Tolerance

cm3/1000 strokes 5.0

Check tolerance

cm3/1000s. : +-8.0

## LOW IDLE

cm3/1000s.

Rated speed rpm 350 rack travel mm 3.00 Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance

5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.03.95 Test oil : ISO 4113

Combination No. : 0403276006

Injection pump

Pump designation : PES6MW100/720RS1517

: -3

EP type number : 0413206020

Governor

Governer design. : RSV350...1200MW0A355

: -1

Governer no. : 0420085229

Cust. part No. : 0250740202

Customer—spec. information Customer : MB-NFZ Motor : OM366LA Power KW : 120.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm: 21.00

Firing order : 1-5-3-6-2-

• 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.45

Tolerance mm : + 0.05

Del. quantity +	Tolerance
cm3/1000 strokes : 103.0	cm3/1000 strokes : +- 1.0
100.0	Check tolerance
Tolerance	cm3/1000s. : +- 3.0
cm3/1000 strokes : +- 1.0	Spreed
1.0	Tolerance
Check tolerance	cm3/1000 strokes : 3.5
cm3/1000s. : +- 3.0	Check tolerance
1	cm3/1000s. : 6.0
Spreed	ChD7 10000: . 0.0
Tolerance	
cm3/1000 strokes : 3.5	RATED SPEED
1	WATER OF ELD
Check tolerance	
cm3/1000s. : 6.0	control lever
	position degree : 98.0
2nd speed rpm : 350	tolerance degree : + 4.0
	total alloc dagles
Rack travel in mm: 3.10	rack travel mm : 1.00
Tolerance mm : + 0.30	Tolerance mm : +- 0.70
Del. quantity	Rated speed rpm : 1400
cm3/1000 strokes : 12.0	nasca speca i piii i i i i i i i i i
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : + 2.0 +	Rated speed rpm : 1320
Check tolerance	
cm3/1000s. : + 4.5	rack travel mm : 10.40
Spreed	Rated speed rpm : 1,5
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : 3.5	
Check tolerance	
cm3/1000s. : 5.5	LOW IDLE
+	
1	
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR +	position degree : 68.0
<del>}</del>	tolerance degree : + 4.0
1	
+	Testing:
GUIDE SLEEVE POSITION +	-
+	Rated speed rpm : 350
+	rack travel mm : 3.10
control lever +	Tolerance mm : +- 0.10
position degree : - 3	
Rated speed rpm : 800 +	rack travel mm : 2.00
+	Rated speed rpm : 390
Rack travel in mm: 0.50 +	Tolerance 1/min : +- 30
Tolerance mm : + 0.20 +	
<del>.</del>	Rated speed rpm ; 100
governor spring +	
pre-tension +	CRT mm min. :> 19.00
click setting $x : 4.50$	
+	
	TORQUE CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	Rated speed rpm : 1200
Rated speed rpm : 1200 +	rack travel mm : 11.45
Aneroid pressure	Tolerance mm : +- 0.05
hPa : 1000 +	Detail and an add and a 200
Del. quantity	Rated speed rpm : 750
cm3/1000 strokes : 103.0 +	rack travel mm : 11.45
•	

A09

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.45
Tolerance mm : +- 0.10

#### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 500
rack travel mm : 9.85
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 530 rack travel mm : 11.00 Tolerance mm : + 0.10

Pressure hPa : 350 rack travel mm : 10.00 Tolerance mm : + 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

cm3/1000s.

1000 hPa Rated speed rpm 750 Del. quantity 97.0 cm3/1000 strokes : Tolerance cm3/1000 strokes 1.5 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance

Aneroid pressure
hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 64.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 3.0

7.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 140.0
Tolerance

cm3/1000 strokes : +- 5.0 Check tolerance

cm3/1000s. : +- 8.0

## LOW IDLE

Rated speed rpm		350
	•	
rack travel mm	;	3.10
Tolerance mm	: +	- 0.30
Del. quantity		
cm3/1000 strokes	:	12.0
Tolerance		
cm3/1000 strokes	: +	- 2.0
Check tolerance		
cm3/1000s.	: +	- 4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance	•	•••
cm3/1000s.	:	5.5

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.03.95 : ISO 4113

Combination No. : 0403276007

Injection pump

Pump designation : PES6MW100/720RS1517

: -3

EP type number : 0413206020

Governor

Governer design. : RSV350...1200MW0A355

: -2

Governer no.

: 0420085230

Cust. part No. : 0250740302

Customer-spec. information : MB-NFZ Customer

Motor

: 0M366LA

Power KW

: 140.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve

: 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1688901101

Opening pressure

bar

208.5

Tolerance bar

: + 1.5

Test lines : 1680750089

Outside diameter :

8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: Tolerance bar : + 1.0

Prestroke mm 4.55 Tolerance mm

test only : +- 0.10

Rack travel in mm : 21.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 13.00 Tolerance mm : + 0.05

Del. quantity +	Spreed
cm3/1000 strokes : 118.0	Tolerance
	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : + 1.0	cm3/1000s. : 6.0
<u></u> ‡	
Check tolerance	
cm3/1000s. : + 3.0 +	RATED SPEED
Connect	
Spreed +	control lever
cm3/1000 strokes : 3.5	position degree : 96.0
	tolerance degree : + 4.0
Check tolerance	
cm3/1000s. : 6.0	rack travel mm : 12.00
+	Rated speed rpm : 1245
Del. quantity	Tolerance 1/min : +- 5
cm3/1000 strokes : 12.0	nools through my and 1 00
cm3/1000 strokes : +- 2.0	rack travel mm : 1.00 Tolerance mm : + 0.70
Check tolerance	Rated speed rpm : 1400
cm3/1000s. : +- 4.5	Marca opeca i più : 1100
Spreed	
Tolerance	LOW IDLE
cm3/1000 strokes : 3.5	
Check tolerance + cm3/1000s. : 5.5	andral laws
CIID/ 10003. : 3.3	control lever position degree : 66.0
I	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	Total and adjited 1. 1.0
WITH GOVERNOR +	Testing:
+	
· †	Rated speed rpm : 350
GUIDE SLEEVE POSITION	rack travel mm : 3.30 Tolerance mm : + 0.10
GOIDE SEELVE 1001110W	Total arice limi
<b>-</b>	rack travel mm : 2.00
control lever	
position degree : -3	Rated speed rpm : 100
Rated speed rpm : 800 +	
Rack travel in mm: 0.50	CRT mm min. : > 19.00
Tolerance mm : + 0.20	
Total area man	TORQUE CONTROL
governor spring +	
pre-tension +	Rated speed rpm : 1200
click setting $x$ : 4.50 $+$	rack travel mm : 13.00
†	Tolerance mm : + 0.05
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 750
TOLL LOAD DELIVERY AT TOLL LOAD OTO:	rack travel mm : 13.00
Rated speed rpm : 1200 +	Tolerance mm : + 0.10
Aneroid pressure	· -
hPa : 1000 +	
Del. quantity	ANEROID/ALTITUDE
cm3/1000 strokes : 118.0	COMPENSATOR TEST
Tolerance + 1.0 +	
Check tolerance	SETTING
cm3/1000s. : +- 3.0	1 ±110

500 1000 13.00 13.00 10.10 500 9.65 10.00 700 350 10.00 10.00 10.00
13.00 13.00 10.10 10.10 10.00 10.00
500 - 9.65 0.10 - 500 - 700 - 350 - 10.00
9.65 + 0.10 500 700 350 10.00
9.65 + 0.10 500 700 350 10.00
9.65 + 0.10 500 700 350 10.00
9.65 + 0.10 500 700 350 10.00
+ 0.10 500 700 350 10.00
500 700 350 10.00
700 350 10.00
350 10.00
10.00
10.00
+ 0.10
ACTERISTICS
4005
1000
750
115.0
113.0
+ 1.5
1.5
+ 4.0
5 <b>.</b> 5
7.0
_
500
/ <b>-</b> -
63.0
. 10
+ 1.0
+- 3.0
. 5.0
12.00
12.00 1245

Rated speed rpm Del. quantity	:	100
cm3/1000 strokes Tolerance	:	150.0
cm3/1000 strokes	: +-	- 5.0
Check tolerance cm3/1000s.	: +-	- 8.0

LOW IDLE		
Del. quantity cm3/1000 strokes Tolerance	:	12.0
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s. Spreed	: +-	4.5
Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000s.	:	5.5

STARTING FUEL DELIVERY

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.03.95 Test oil : ISO 4113

Combination No. : 0403276008

## Injection pump

Pump designation : PES6MW100/720RS1517

: -2

EP type number : 0413206019

#### Governor

Governer design. : RSV350...1300MW0A354

Governer no. : 0420085227

Cust. part No. : 0250740502

Customer-spec. information Customer : MB-NFZ Motor : OM366LA Power KW : 177.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### **REMARKS**

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : +- 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm: 21.00

Firing order : 1-5-3-6-2-

• 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance "NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.40 Tolerance mm : + 0.05

sterance man : +- 0.05

Del. quantity +	Spreed
cm3/1000 strokes : 133.0	Tolerance
100.0	cm3/1000 strokes : 5.0
Talanana	
Tolerance	Check tolerance
cm3/1000 strokes : +- 1.0 +	cm3/1000s. : 8.0
+	
Check tolerance	
cm3/1000s. : +- 4.0	RATED SPEED
- CHD7 10005 4.0	RATED SPEED
<u> </u>	•
Spreed	
Tolerance +	control lever
cm3/1000 strokes : $5.0$	position degree : 104.0
1	tolerance degree : +- 4.0
Check tolerance	toterance degree : += 4.0
cm3/1000s. : 8.0 +	rack travel mm : 1.00
+	Tolerance mm : + 0.70
Del. quantity	Rated speed rpm : 1600
cm3/1000 strokes : 12.0	
	mant. Amount non
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : + 2.0 +	Rated speed rpm : 1465
Check tolerance	
cm3/1000s. : + 4.5	rack travel mm : 13.40
Spreed	
Tolerance +	Tolerance 1/min : +- 5
cm3/1000 strokes : 2.0 +	
Check tolerance +	
cm3/1000s. : 4.0	LOW IDLE
1	TOM IDEE
Ţ	0-24***********
†	Setting point w/out bumper spring
(B) SETTING OF INJECTION PUMP +	
WITH GOVERNOR +	Rated speed rpm : 350
1	rack travel mm : 4.00
	Table Clavet IIIII . 4.00
Ţ	T
T	Testing:
GUIDE SLEEVE POSITION	restrig.
GUIDE SLEEVE POSITION	-
GUIDE SLEEVE POSITION	rack travel mm : 2.00
+	rack travel mm : 2.00 Rated speed rpm : 430
control lever	rack travel mm : 2.00
control lever position degree : - 3	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30
control lever	rack travel mm : 2.00 Rated speed rpm : 430
control lever position degree : - 3	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30
control lever position degree : - 3 Rated speed rpm : 800	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30 Rated speed rpm : 100
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30
control lever position degree : - 3 Rated speed rpm : 800	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30 Rated speed rpm : 100
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30 Rated speed rpm : 100 CRT mm min. : > 19.00
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30 Rated speed rpm : 100
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30 Rated speed rpm : 100 CRT mm min. : > 19.00
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30 Rated speed rpm : 100 CRT mm min. : > 19.00  TORQUE CONTROL
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del quantity	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : 750 rack travel mm : 14.40 Tolerance mm : 14.40 Tolerance mm : + 0.10
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 133.0	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40 Tolerance mm : + 0.10  ANEROID/ALTITUDE
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del. quantity	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : 750 rack travel mm : 14.40 Tolerance mm : 14.40 Tolerance mm : + 0.10
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 133.0 Tolerance	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40 Tolerance mm : + 0.10  ANEROID/ALTITUDE
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 133.0 Tolerance cm3/1000 strokes : + 1.0	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40 Tolerance mm : + 0.10  ANEROID/ALTITUDE
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 133.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 133.0 Tolerance cm3/1000 strokes : + 1.0	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1300 rack travel mm : 14.40 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 14.40 Tolerance mm : + 0.10  ANEROID/ALTITUDE

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: : : +	500 1200 14.40 - 0.10
MEASUREMENT		
Pressure hPa	:	-

Pressure hPa	:	-
Rated speed rpm	:	500
Tolerance mm	: +	- 0.10

nated opeca (pin	Rated	speed	rpm	:	500
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Pressure hPa	:	800
rack travel mm	:	4.30
Tolerance mm	: +	- 0.10

Pressure hPa	:	450
rack travel mm	:	1.90
Tolerance mm	: +-	- 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm	:	1200 750
Del. quantity cm3/1000 strokes Tolerance	:	132.0
cm3/1000 strokes	: +	- 2.0
Check tolerance cm3/1000s. Spreed	: +	- 5.0
Tolerance cm3/1000 strokes Check tolerance	:	6.0
7 /40000	_	~ ~

cm3/1000s.	:		9.0
Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		46.0
Tolerance			
cm3/1000 strokes	•	+-	1.0
Check tolerance	•		
cm3/1000s			3.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	160.0

Tolerance cm3/1000 strokes	: +-	5.0
Check tolerance cm3/1000s.	: +-	8.0

LOW IDLE		
Del. quantity cm3/1000 strokes	:	

12.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s.

4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.03.95 : ISO 4113

Combination No. : 0403276009

Injection pump

Pump designation : PES6MW100/720RS1517

: -2

EP type number : 0413206019

Governor

Governer design. : RSV350...1200MWDA357

Governer no.

: 0420085233

Cust. part No. : 0250740402

Customer-spec. information Customer : MB-NFZ

Motor

: 0M366LA

Power KW

: 155.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

40

Tolerance \*C

: ← 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1688901101

Opening pressure

: 208.5

Tolerance bar

**:** + 1.5

Test lines

: 1680750089

Outside diameter : 8.0

x inside diameter:

3.0

x length mm :

600

## REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only : **←** 0.10

Rack travel in mm: 21.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : + - 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.30 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 118.0	Spreed Tolerance cm3/1000 strokes : 4.5
Tolerance cm3/1000 strokes : + 1.0	Check tolerance cm3/1000s. : 7.0
Check tolerance cm3/1000s. : + 3.0	RATED SPEED
Spreed Tolerance cm3/1000 strokes : 4.5	control lever position degree : 108.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 7.0	rack travel mm : 1.00 Tolerance mm : +- 0.70
Del. quantity cm3/1000 strokes : 12.0	Rated speed rpm : 1450 rack travel mm : 4.00
cm3/1000 strokes : + 2.0 + Check tolerance +	Rated speed rpm : 1375
cm3/1000s. : +- 4.5 Spreed Tolerance	rack travel mm : 12.30 Rated speed rpm : 1245 Tolerance 1/min : +- 5
cm3/1000 strokes : 2.0 + Check tolerance +	
cm3/1000s. : 4.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Setting point w/out bumper spring  Rated speed rpm : 350  rack travel mm : 3.90
GUIDE SLEEVE POSITION	Testing:
control lever	rack travel mm : 2.00 Rated speed rpm : 430
position degree : -3 Rated speed rpm : 800	Rated speed rpm : 100
Rack travel in mm : 0.50 + Tolerance mm : + 0.20 +	CRT mm min. :> 19.00
governor spring	TORQUE CONTROL
pre-tension click setting x : 4.50	Rated speed rpm : 1200 rack travel mm : 13.30 Tolerance mm : + 0.05
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 750 rack travel mm : 13.30
Rated speed rpm : 1200 + Aneroid pressure	Tolerance mm : +- 0.10
hPa : 1300 + Del. quantity + 118 0	ANEROID/ALTITUDE
cm3/1000 strokes : 118.0 + Tolerance + cm3/1000 strokes : + 1.0 + 1.0	COMPENSATOR TEST
Check tolerance cm3/1000s. : + 3.0	SETTING

Rated speed rpm	:	500
Pressure hPa	:	1300
rack travel mm	:	13.30
Tolerance mm	: -	<b>⊢</b> 0.10

## **MEASUREMENT**

Pressure hPa	:	-
Rated speed rpm	:	500
Tolerance mm	: +	- 0.10

Rated	speed	rpm	:	500
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Pressure hPa	:	600
rack travel mm	:	3.00
Tolerance mm	: +-	0.10

Pressure hPa	:	300
rack travel mm	:	1.20
Tolerance mm	: +	- 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid	pressure
	P1 C0041 C

hPa	:	1300
Rated speed rpm	:	750
Del. quantity		
		117

117.0 cm3/1000 strokes :

Tolerance

1.5 cm3/1000 strokes : +-Check tolerance

cm3/1000s.

4.0 Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s. 9.0

Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity cm3/1000 strokes : 48.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s. : +--3.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	145.0

Tolerance

cm3/1000 strokes : +- 5.0

Check tolerance		
cm3/1000S.	: +-	8.0

## LOW IDLE

:	12.0
: +-	2.0
: +-	4.5
:	2.0
:	4.0
	: : +- : +-

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.03.95 Test oil : ISO 4113

Combination No. : 0403446177

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0413406138

Governor

Governer design. : RQV300...1300MW48

Governer no. : 0420083066

Cust. part No. :

Customer—spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

+	tolerance degree : +- 4.0
Check tolerance	•
cm3/1000s. : 6.0	rack travel mm : 10.00
<u> </u>	Rated speed rpm : 1345
2nd speed rpm : 300	Tolerance 1/min : + 5
Rook Amount du maris 7 00	
Rack travel in mm: 7.90	rack travel mm : 4.00
Tolerance mm : +- 0.20	Rated speed rpm : 1440
Del. quantity + cm3/1000 strokes : 11.0 +	Tolerance 1/min : +- 15
Tolerance	rack travel mm : 0.50
cm3/1000 strokes : +- 2.0	Tolerance mm : +- 0.50
Check tolerance	Rated speed rpm : 1550
cm3/1000s. : +- 4.5	
Spreed	
Tolerance	LOW IDLE
cm3/1000 strokes : 3.5	· · · · · · · · · · · · · · · · · · ·
Check tolerance	
cm3/1000s. : 5.5	control lever
+	position degree : 83.0
+	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	Testing:
†	Datad and James 200
<b>†</b>	Rated speed rpm : 300
GUIDE SLEEVE POSITION	rack travel mm : 7.90 Tolerance mm : +- J.10
GOIDE SLEEVE POSITION	Toterance man : + 3.10
$\mathbf{I}$	Rated speed rpm : 100
control lever	nated speed ipin
position degree : -1	CRT mm min. :> 8.70
Rated speed rpm : 1280	
<del>-</del>	
Rack travel in mm: 16.50	CONTINUOUS-ACTION CONTROL
Tolerance mm : + 1.30 +	
<b>†</b>	Rated speed rpm : 415
FULL LOAD DELIVERY AT FULL LOAD STOP	
TOLL LOAD DELIVERY AT TOLL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 1300	TOTAGE CONTINOE
Aneroid pressure	Rated speed rpm : 1300
hPa : -	rack travel mm : 11.05
Del. quantity +	Tolerance mm : + 0.05
cm3/1000 strokes : 78.0 +	
Tolerance +	Rated speed rpm : 800
cm3/1000 strokes : + 1.0 +	rack travel mm : 11.90
Check tolerance +	Tolerance mm : +- 0.10
cm3/1000s. : + 3.0 +	
Spreed	Rated speed rpm : 585
Tolerance 7.7	rack travel mm : 12.10 Tolerance mm : +- 0.10
cm3/1000 strokes : 3.5	Tolerance mm : +- 0.10
Check tolerance + cm3/1000s. : 6.0 +	Rated speed rpm : 1100
Ciii37 10008 0.0 I	Rated speed rpm : 1100 rack travel mm : 11.20
	Tolerance mm : +- 0.10
RATED SPEED	10 CC1 G110 C 1101 . 1 U. 1U
1	
control lever +	START CUT-OUT
control lever position degree : 113.0 +	START CUT-OUT

Rated speed rpm	: > 100
Check speed 1/min Rated speed rpm	: > 80 : < 230
Check speed 1/min	: < 250
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 800
cm3/1000 strokes Tolerance	: 77.0
cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 7.0
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 585
cm3/1000 strokes Tolerance	: 70.0
cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm	: 10.00
Rated speed rpm	: 1345
Tolerance 1/min	: +- 5
STARTING FUEL DELI	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes Tolerance	: 83.0
cm3/1000 strokes Check tolerance	: +- 5.0
cm3/1000s.	: +- 8.0
LOW IDLE	

Rated speed rpm	:	300
rack travel mm	:	7.90
Tolerance mm	: +	0.20
Del. quantity		
cm3/1000 strokes	:	11.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.03.95 Test oil : ISO 4113

Combination No. : 0403446207

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0413406138

Governor

Governer design. : RQ300/1300MW96 Governer no. : 0420082032

Cust. part No. : 0160747802

Customer—spec. information Customer : MB—NFZ Motor : OM366A

Power KW : 125.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.75Tolerance mm :  $\leftarrow 0.05$ 

test only :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance "NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

+	Rated speed rpm : 1345
Check tolerance	Tolerance 1/min : + 5
cm3/1000s. : 6.0	
700	rack travel mm : 4.00
2nd speed rpm : 300	Rated speed rpm : 1440
Dook doored in my . 7.00	Tolerance 1/min : +- 15
Rack travel in mm: 7.90 Tolerance mm: + 0.20	nosis travel on a 0.50
Del. quantity	rack travel mm : 0.50 Tolerance mm : +- 0.50
cm3/1000 strokes : 11.0	Rated speed rpm : 1550
Tolerance	nated speed (pill : 1550
cm3/1000 strokes : + 2.0	
Check tolerance	LOW IDLE
cm3/1000s. : $\leftarrow$ 4.5	
Spreed	
Tolerance	control lever
cm3/1000 strokes : 3.5	position degree : 77.0
Check tolerance +	tolerance degree : +- 4.0
cm3/1000s. : 5.5	
†	Testing:
(B) SETTING OF INJECTION PUMP	Poted speed pre
WITH GOVERNOR	Rated speed rpm : 300 rack travel mm : 7.90
WITH GOVERNOR	rack travel mm : 7.90 Tolerance mm : +- 0.10
$\mathbf{I}$	Total alice limit
	rack travel mm : 2.00
GUIDE SLEEVE POSITION	. 401. 1. 4.00 1111.
<del> </del>	Rated speed rpm : 100
Rated speed rpm : 1200	·
<del>}</del>	CRT mm min. :> 9.00
Rack travel in mm: 13.50 +	
Tolerance mm : + 0.80 +	
†	TORQUE CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1300
FOLL LOAD DELIVERY AT FOLL LOAD STOP	Rated speed rpm : 1300 rack travel mm : 11.05
Rated speed rpm : 1300	Tolerance mm : + 0.05
Aneroid pressure	Totel alice Hall
hPa : -	Rated speed rpm : 800
Del. quantity	rack travel mm : 11.90
cm3/1000 strokes : 78.0 +	Tolerance mm : +- 0.10
Tolerance	
cm3/1000 strokes : + 1.0	Rated speed rpm : 585 rack travel mm : 12.10
Check tolerance +	rack travel mm : 12.10 Tolerance mm : + 0.10
cm3/1000s. : +- 3.0 +	Tolerance mm : +- 0.10
Spreed +	
Tolerance	Rated speed rpm : 1100
cm3/1000 strokes : 3.5	rack travel mm : 11.20 Tolerance mm : +- 0.10
Check tolerance + cm3/1000s. : 6.0 +	roterance mm : +- 0.10
cm3/1000s. : 6.0	
RATED SPEED	START CUT-OUT
THE PERSON NAME	
1	Rated speed rpm : > 100
control lever	Check
position degree : 100.0	Check
	Check speed 1/min :> 80 Rated speed rpm : < 180
position degree : 100.0	Check

ARACTERISTICS
: -
: 800
: 77.0
. 77.0
: +- 1.5
: +- 4.0
: 5.0
. 3.0
: 7.0
•
585
. 505
: 70.0
: + 1.5
: +- 4.0
11.5
: 10.00
: 1345
: + 5
IVERY
: 100
. 07.0
: 83.0
: <del>+-</del> 5.0
: <del>+-</del> 5.0
: + 5.0 : + 8.0
: +- 8.0
: +- 8.0 : 300
: +- 8.0 : 300 : 7.90
: +- 8.0 : 300

roterance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.03.95 Test oil : ISO 4113

Combination No. : 0403476085

Injection pump

Pump designation : PES6MW100/720RS1205

EP type number : 0413406195

Governor

Governer design. : RSV350...1300MW0A329

: -7

Governer no. : 0420085142

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : OM 366 LA Power KW : 184.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. \*C : 40 Tolerance \*C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Test hydr. locking device for starting with 500...1000 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + .05

test only :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : + 0.50

Check

tolerance "NW :  $\leftarrow$  0.75

# BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 15.55
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 124.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0	- Tolerance - cm3/1000 strokes : 3.5 - Check tolerance
Spreed	- theck toterance - cm3/1000s. : 6.0
Tolerance	- (1115/1000), ; 6.0
cm3/1000 strokes : 3.5	
I 3.3	- RATED SPEED
Check tolerance	- NATED OF CED
cm3/1000s. : 6.0	_
	- control lever
2nd speed rpm : 350	position degree : 100.0
4	tolerance degree : + 4.0
Rack travel in mm: $6.40$	•
Tolerance mm : + 0.20	- rack travel mm : 14.50
Del. quantity	- Rated speed rpm : 1335
cm3/1000 strokes : 12.0 +	- Tolerance 1/min : +- 5
Tolerance	•
cm3/1000 strokes : + 2.0 +	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1435
cm3/1000s. : + 4.5	Tolerance 1/min : +- 15
Spreed +	· · · · · · · · · · · · · · · · · · ·
Tolerance + cm3/1000 strokes : 3.5 +	rack travel mm : 1.00
cm3/1000 strokes : 3.5	Tolerance mm : + 0.70
cm3/1000s. : 5.5	Rated speed rpm : 1580
m I	LOW IDLE
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
WITH GOVERNOR +	
WITH GOVERNOR	control lever
WITH GOVERNOR	control lever position degree : 69.0
WITH GOVERNOR	
GUIDE SLEEVE POSITION	position degree : 69.0 tolerance degree : +- 4.0
<del></del>	position degree : 69.0
GUIDE SLEEVE POSITION	position degree : 69.0 tolerance degree : +- 4.0  Testing:
GUIDE SLEEVE POSITION  control lever	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350
GUIDE SLEEVE POSITION  control lever position degree : - 3	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40
GUIDE SLEEVE POSITION  control lever	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200 Del. quantity	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05  Rated speed rpm : 800
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 124.0	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05  Rated speed rpm : 800 rack travel mm : 15.55
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 124.0 Tolerance	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05  Rated speed rpm : 800
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 124.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05  Rated speed rpm : 800 rack travel mm : 15.55
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 124.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05  Rated speed rpm : 800 rack travel mm : 15.55
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 124.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 69.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 15.55 Tolerance mm : + 0.05  Rated speed rpm : 800 rack travel mm : 15.55

## ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.55
Tolerance mm : +- 0.05

#### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 500
rack travel mm : 11.35
Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : 650 rack travel mm : 14.00 Tolerance mm : +- 0.10

Pressure hPa : 450 rack travel mm : 12.80 Tolerance mm : + 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 122.0

cm3/1000 strokes : 122.0 Tolerance cm3/1000 strokes : +- 1.5

cm3/1000 strokes : - Check tolerance

cm3/1000s. : + 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 7.0

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity cm3/1000 strokes

m3/1000 strokes : 48.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

**:** +- 3.0

#### BREAKAWAY

Rack travel in mm: 14.50
Rated speed rpm: 1335
Tolerance 1/min: +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity

Del. quantity cm3/1000 strokes :

Tolerance cm3/1000 strokes : +- 5.0

115.0

Check tolerance

cm3/1000s. : + 8.0

#### LOW IDLE

Rated speed rpm rack travel mm	:	∫0 6.40
Tolerance mm	: +-	0.20
Del. quantity cm3/1000 strokes	•	12.0
Tolerance	•	
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s.	: +-	4.5
Spreed		
Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.03.95 Test oil : ISO 4113

Combination No. : 0403476138

# Injection pump

Pump designation : PES6MW100/720RS1130

: -3

EP type number : 0413406235

Governor

Governer design. : RSV350...1300MW0A318

Governer rs. : 0420085052

Cust. part No. : 0250748802

Customer—spec. information Customer : MB-NFZ Motor : OM 366 A

Power KW : 125.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

test only  $: \leftarrow 0.10$ 

Rack travel in mm : 2.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 11.10 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 77.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Talamana	
Tolerance + cm3/1000 strokes : 3.5	
cms/1000 strokes : 3.5	DATEN COLEN
Check tolerance	- RATED SPEED
cm3/1000s. : 6.0	<del>-</del>
2nd anod nm . 750	- control lever
2nd speed rpm : 350	- position degree : 107.0
Donk durant in man a 4 /0	- tolerance degree : +- 4.0
Rack travel in mm: 6.40	- 40.00
Tolerance mm : +- 0.20	- rack travel mm : 10.00
Del. quantity	- Rated speed rpm : 1325
cm3/1000 strokes : 11.0	- Tolerance 1/min : +- 5
Tolerance +	-
cm3/1000 strokes : +- 2.0 +	- rack travel mm : 4.00
Check tolerance	- Rated speed rpm : 1395
cm3/1000s. : +- 4.5	- Tolerance 1/min : + 15
Spreed	
Tolerance	rack travel mm : 1.00
cm3/1000 strokes : 3.5	Tolerance mm : + 0.70
Check tolerance	Rated speed rpm : 1560
cm3/1000s. : 5.5	•
†	LOUTDIE
(B) SETTING OF INJECTION PUMP	- LOW IDLE
WITH GOVERNOR +	•
WITH GOVERNOR	· control lever
$\mathbf{I}$	position degree : `8.0
<u> </u>	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	
	Testing:
1	
control lever	•
control lever + 3	Rated speed rpm : 350
position degree : - 3	Rated speed rpm : 350 rack travel mm : 6.40
	Rated speed rpm : 350
position degree : -3 Rated speed rpm : 800	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10
position degree : - 3	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 470
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 470
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : -	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0 Tolerance	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750 rack travel mm : 11.60
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cn/3/1000s. : + 3.0	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750 rack travel mm : 11.60 Tolerance mm : + 0.05
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cni3/1000s. : + 3.0 Spreed	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750 rack travel mm : 11.60 Tolerance mm : + 0.05  Rated speed rpm : 255
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cni3/1000s. : + 3.0 Spreed Tolerance	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750 rack travel mm : 11.60 Tolerance mm : + 0.05  Rated speed rpm : 255
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750 rack travel mm : 11.60 Tolerance mm : + 0.05  Rated speed rpm : 750 Rated speed rpm : 750 Rated speed rpm : 11.60 Tolerance mm : + 0.05
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 6.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1280 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 77.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cni3/1000s. : + 3.0 Spreed Tolerance	Rated speed rpm : 350 rack travel mm : 6.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 470 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1280 rack travel mm : 11.10 Tolerance mm : + 0.10  Rated speed rpm : 750 rack travel mm : 11.60 Tolerance mm : + 0.05  Rated speed rpm : 255

## FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 750 Rated speed rpm Del. quantity cm3/1000 strokes : 74.0 Tolerance cm3/1000 strokes : +-1.5 Check tolerance cm3/1000s.4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 7.0 BREAKAWAY Rack travel in mm: 10.00 Rated speed rpm 1325 Tolerance 1/min STARTING FUEL DELIVERY 100 Rated speed rpm Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes 5.0 Check tolerance cm3/1000s. 8.0 LOW IDLE 350 Rated speed rpm 6.40 rack travel mm 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance 4.5 cm3/1000s. Spreed Tolerance 3.5 cm3/1000 strokes :

5.5

Check tolerance

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

Combination No. : 0400846559

Injection pump

Pump designation : PES6A90D410RS2710

EP type number : 0410896082

Governor

Governer design. : RQV300...1400AB1065

: -9L

Governer no. : 0420212202

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : OM 366 Power KW : 92.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0681343009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.30Tolerance mm :  $\leftarrow 0.05$ 

test only  $: \leftarrow 0.10$ 

Rack travel in mm : 5.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  : +- 0.75

# BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 59.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Talanaia a	
Tolerance +	and the state of the same
cm3/1000 strokes : 3.0 +	control lever
	position degree : 111.0
Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 7.0 +	0.70
700	rack travel mm : 9.30
2nd speed rpm : 300 +	Rated speed rpm : 1445
<b>†</b>	Tolerance 1/min : +- 5
Rack travel in mm: 8.80	
Tolerance mm : + 0.10	rack travel mm : 4.00
Del. quantity	Rated speed rpm : 1555
cm3/1000 strokes : 12.0 +	Tolerance 1/min : + 15
Tolerance +	6.50
cm3/1000 strokes : +- 2.0 +	rack travel mm : 0.50
Check tolerance	Tolerance mm : + 0.50
cm3/1000s. : + 4.0 +	Rated speed rpm : 1650
Spreed	
Tolerance +	1 At 1 # At 2
cm3/1000 strokes : 4.5	LOW IDLE
Check tolerance	
cm3/1000s. : 7.0 +	
†	control lever
(#) OFFETALO OF THE PROPERTY O	position degree : 75.0
(B) SETTING OF INJECTION PUMP	tolerance degree : +- 4.0
WITH GOVERNOR +	
†	Testing:
†	Data diseased many 300
CUITAGE OF CERTIFIC PROTECTION	Rated speed rpm : 300
GUIDE SLEEVE POSITION	rack travel mm : 8.80
†	Tolerance mm : + 0.10
control lever	Dated around mm . 100
	Rated speed rpm : 100
position degree : -1 Rated speed rpm : 1500	CRT mm min. :> 10.30
Rated speed rpin : 1500	CKI AMI MITI. : 7 (U.SU
Rack travel in mm: 16.50	
Tolerance mm : + 1.30	CONTINUOUS-ACTION CONTROL
	CONTINUOUS ACTION CONTROL
	Rated speed rpm : 655
FULL LOAD DELIVERY AT FULL LOAD STOP	Wated Speed I pill 1 055
1	
Rated speed rpm : 1400	TORQUE CONTROL
Aneroid pressure	
hPa : -	Rated speed rpm : 1400
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 59.5	Tolerance mm : $+$ 0.05
Tolerance	
cm3/1000  strokes : + 0.5	Rated speed rpm : 500
Check tolerance +	rack travel mm : 11.40
cm3/1000s. : +- 2.5 +	Tolerance mm : + 0.05
Spreed	
Tolerance	Rated speed rpm : 750
cm3/1000 strokes : 3.0 +	rack travel mm : 11.10
Check tolerance +	Tolerance mm : +- 0.10
cm3/1000s. : 7.0 +	
+	Rated speed rpm : 1100
+	rack travel mm : 10.40
RATED SPEED +	Tolerance mm : +- 0.15
+	
+	

START CUT-OUT
Rated speed rpm :> 100 Check
speed 1/min :> 80
Rated speed rpm : < 220
Check
speed 1/min : < 240
FUEL DELIVERY CHARACTERISTICS
Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 46.0
Tolerance cm3/1000 strokes : +- 1.5
Check tolerance
cm3/1000s. : +- 3.5
Amanaid proceurs
Aneroid pressure hPa : -
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 49.0
Tolerance
cm3/1000 strokes : + 1.5
Check tolerance cm3/1000S. : +- 3.5
BREAKAWAY
Rack travel in mm : 9.30
Rated speed rpm : 1445
Tolerance 1/min : + 5
OTABITALO SUEL DEL TUENO
STARTING FUEL DELIVERY
Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : + 0.20
Del. quantity cm3/1000 strokes : 83.0
cm3/1000 strokes : 83.0 Tolerance
cm3/1000 strokes : +- 7.5
Check tolerance
cm3/1000s. : + 10.0

Rated speed rpm	:	300
rack travel mm	:	8.80
Tolerance mm	: +-	0.10
Del. quantity		
cm3/1000 strokes	:	12.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.0
Spreed		
Tolerance		
cm3/1000 strokes	•	4.5
Check tolerance		
cm3/1000s.	:	7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.03.95 Edition Test oil : ISO 4113

Combination No. : 0400865027

Injection pump

Pump designation : PES5A80D410/3RS2526

EP type number : 0410885004

Governor

Governer design. : RSV325...900A1C602

: -5L

: 0420232605 Governer no.

Cust. part No. : 0423 1362 KY0150-17

Customer-spec. information

: KHD Customer Metor : F5L912

Power KW : 42.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C 2.0

: 1419992198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0681343009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0 x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm 1.95 : + 0.05 Tolerance mm

test only : + 0.10

Rack travel in mm : .50
Tolerance mm : + 1.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 11.40 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 53.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +-2.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

	1
Check tolerance	+ control lever
cm3/1000s. : 4.0	position degree : 97.0
	+ tolerance degree : + 4.0
2nd speed rpm : 325	+
•	+ rack travel mm : 10.40
Rack travel in mm: 8.70	+ Rated speed rpm : 945
Del. quantity	+ Tolerance 1/min : + 5
cm3/1000 strokes : 12.0	+
Tolerance cm3/1000 strokes : +- 1.5	+ rack travel mm : 4.00
Check tolerance	Rated speed rpm : 980 Tolerance 1/min : + 15
cm3/1000s. : +- 3.5	T Toterance Trimin . +- 15
Spreed	+ rack travel mm : 0.85
Tolerance	+ Tolerance mm : +- 0.55
cm3/1000 strokes : 4.0	+ Rated speed rpm : 1150
Check tolerance	+
cm3/1000s. : 6.0	+ rack travel mm : 4.00
	+ Rated speed rpm : 1010
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	LOW IDLE
WITH GOVERNOR	T COW IDEE
	+
<del></del>	+ control lever
GUIDE SLEEVE POSITION	+ position degree : 73.0
	tolerance degree : + 4.0
control lever	+ Setting point w/out bumper spring
position degree : - 3	T second both wood builder spring
Rated speed rpm : 800	Rated speed rpm : 325
· ·	+ rack travel mm : 8.20
Rack travel in mm : 0.50	+ .
Tolerance mm : $\leftarrow$ 0.20	+ Testing:
governor spring	+ Rated speed rpm : 325
pre-tension	+ Rated speed rpm : 325 + rack travel mm : 8.70
click setting x : 4.00	rack travel mm : 8.70 Tolerance mm : + 0.10
The state of the s	+
	+ rack travel mm : 2.00
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated speed rpm : 450
a	† Tolerance 1/min : + 30
Rated speed rpm : 1130	
	Total aread pro . 100
Aneroid pressure	Rated speed rpm : 100
Aneroid pressure hPa : -	<del>}</del>
Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 100  CRT mm min. :> 19.50
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance	<del>}</del>
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : +- 0.5	<del>}</del>
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : +- 0.5 Check tolerance	CRT mm min. : > 19.50  TORQUE CONTROL
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0	CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 900
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed	CRT mm min. : > 19.50  TORQUE CONTROL  Rated speed rpm : 900 rack travel mm : 11.40
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance	CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 900
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed	CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 900 rack travel mm : 11.40 Tolerance mm :+ 0.05
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance cm3/1000 strokes : 2.5	CRT mm min. : > 19.50  TORQUE CONTROL  Rated speed rpm : 900 rack travel mm : 11.40
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance	CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 900 rack travel mm : 11.40 Tolerance mm :+ 0.05  Rated speed rpm : 500
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance	CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 900 rack travel mm : 11.40 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.45

## **BREAKAWAY**

Rack travel in mm: 10.40 Rated speed rpm : 945 Tolerance 1/min

## STARTING FUEL DELIVERY

Rated speed rpm 100 Del. quantity cm3/1000 strokes : 115.0 Tolerance

cm3/1000 strokes :  $\leftarrow$ 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm 325 8.70 rack travel mm Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : +-1.5 Check tolerance cm3/1000s. 3.5 : +-Spreed Tolerance 4.0 cm3/1000 strokes :

Check tolerance cm3/1000s. 6.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.03.95 Edition : ISO 4113 Test oil

Combination No. : 0401846939

Injection pump

Pump designation : PE6P110A320RS3265

EP type number : 0411816778

Governor

Governer design. : RQV300...1050PA232

: -5

: 0421813895 Governer no.

Cust. part No. : 11031123

: -P03 V. 3/94

Customer-spec. information

Customer : VME

: TD102KCE Motor

Power KW : 180.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

: 1417413025 Overflow valve

Inlet press. bar : 1.5 Tolerance bar : +-

Test nozzle holde

assembly : 0681343009

Opening pressure

173.5 Tolerance bar 1.5

: 1680750089 Test lines

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 3.05 : + 0.05 Tolerance mm

: + 3.10 test only

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.45

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 158.0

Tolerance cm3/1000 strokes : + 1.0	+ rack travel mm : 11.45 + Rated speed rpm : 1095 + Tolerance 1/min : + 5
Check tolerance cm3/1000s. : + 3.0	rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15
Spreed Tolerance cm3/1000 strokes : 4.5	+ rack travel mm : 0.50 + Tolerance mm : + 0.50 + Rated speed rpm : 1300
Check tolerance cm3/1000s. : 7.5	LOW IDLE
	+ 10LL
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 86.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	t - control lever
	position degree : 20.0
	tolerance degree : +- 4.0
control lever position degree : - 1 Rated speed rpm : 1150	Testing:
	Rated speed rpm : 3
Rack travel in mm: 16.50	rack travel mm : 4.90
Tolerance mm : + 1.30	Tolerance mm : +- 0.10
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	+
Rated speed rpm : 700 - Aneroid pressure	+ CRT mm min. :> 6.50
hPa : 700	CONTINUOUS-ACTION CONTROL
Del. quantity	<del></del>
cm3/1000 strokes : 158.0 - Tolerance -	Rated speed rpm : 355
cm3/1000 strokes : + 1.0 - Check tolerance	
cm3/1000s. : +- 3.0 - Spreed	ANEROID/ALTITUDE COMPENSATOR TEST
Tolerance -	+
cm3/1000 strokes : 4.5 - Check tolerance -	CETTIALC
cm3/1000s. : 7.5	+ SETTING L
-	Rated speed rpm : 500
RATED SPEED	Pressure hPa : 700 rack travel mm : 12.45 Tolerance mm : +- 0.05
4	Tolerance mm : +- 0.05
control lever	MEASUREMENT
position degree : 50.0	
tolerance degree : +- 4.0 -	Pressure hPa : -
	Rated speed rpm : 500
control lever	rack travel mm : 10.00
position degree : 117.0	Tolerance mm : +- 0.10
tolerance degree : +- 4.0	Rated speed rpm : 500
7	Tracea specia i più : 500

Pressure hPa : 340 rack travel mm : 2.00 Tolerance mm : +- 0.10

Pressure hPa : 70 rack travel mm : 0.25 Tolerance mm : + 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 105.0
Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

#### BREAKAWAY

Rack travel in mm : 11.45
Rated speed rpm : 1095
Tolerance 1/min : +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.03.95 Edition Test oil : ISO 4113

Combination No. : 0401846989

Injection pump

Pump designation : PE6P110A320RS3108X

EP type number : 0411816730

Governor

Governer design. : RQV250...1100PA920

: -8

Governer no. : 0421814104

: 425662 Cust. part No.

: -PO2 RELEASED

Customer-spec. information

Customer : VOLVO-TRUCK

: THD101,102,TD102 Motor

: 197.0 Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2417413046

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 0681343009

Opening pressure

bar 173.5 Tolerance bar 1.5

: 1680750089 Test lines

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm 3.05 Tolerance mm : +- 0.05

: + 3.10 test only

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: **←** 0.30 Tolerance

Check

tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 166.0

		1	
Tolerance cm3/1000 strokes	: + 1.0	control lever position degree	: - 1
Check tolerance cm3/1000s.	: + 3.0	Rated speed rpm Rack travel in mm	
Spreed	<del></del>	Tolerance mm	: +-
Tolerance cm3/1000 strokes	: 4.0	FULL LOAD DELIVER	Y AT FL
Check tolerance cm3/1000s.	: 7.5	Rated speed rpm Aneroid pressure	: 7
	1	+ hPa - Del. quantity	: 10
(B) SETTING OF I	NJECTION PUMP	+ cm3/1000 strokes + Tolerance + cm3/1000 strokes	
GUIDE SLEEVE TRA	VEL		: +-
Rated speed rpm guide sleeve		Tolerance cm3/1000 strokes	:
travel mm Tolerance mm	: 1.19 : + 0.25	+ Check tolerance - cm3/1000s.	:
Rated speed rpm guide sleeve	: 1176	RATED SPEED	
travel mm Tolerance mm	: 8.29 : ← 0.25	‡	
Rated speed rpm guide sleeve	: 1090	control lever position degree tolerance degree	: : +-
travel mm Tolerance mm	: 6.95 : + 0.25	control lever	4
Rated speed rpm guide sleeve	: 387	position degree tolerance degree	: +
travel mm Tolerance mm	: 2.96 : + 0.25	rack travel mm Rated speed rpm Tolerance 1/min	: 1 : 11
Rated speed rpm guide sleeve		rack travel mm	:
travel mm Tolerance mm	: 3.71 : ← 0.25	+ Rated speed rpm + Tolerance 1/min	: 12 : <del>+</del>
Rated speed rpm guide sleeve	: 520	rack travel mm Tolerance mm	: +-
travel mm Tolerance mm	: 4.67 : + 0.25	Rated speed rpm	: 13:
Rated speed rpm guide sleeve	: 1370	LOW IDLE	
travel mm Tolerance mm	: 11.50 : + 0.50	control lever position degree	: (
GUIDE SLEEVE POSI	TION	tolerance degree	; +-

175 16.50 1.30 TULL LOAD STOP 700 000 166.0 1.0 3.0 4.0 7.5 65.0 4.0 119.0 4.0 11.35 11... 165 5 4.00 240 15 0.50 0.50 350 64.0 4.0 control lever position degree : 12.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250 rack travel mm : 5.30 Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.35
Tolerance mm : + 0.05

**MEASUREMENT** 

Pressure hPa : Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : +- 0.15

Rated speed rpm : 500

Pressure hPa : 740 rack travel mm : 2.50 Tolerance mm : + 0.15

Pressure hPa : 250
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 700 Del. quantity

cm3/1000 strokes : 114.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

BREAKAWAY

Rack travel in mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.50 Tolerance mm : + 0.15

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95 Test oil : ISO 4113

Combination No. : 0402046829

Injection pump

Pump designation : PES6P120A320RS3284

EP type number : 0412026749

Governor

Governer design. : RQV275...1050PA995

: -1

Governer no. : 0421813941

Cust. part No. : CCEP 5120A 66-177

Customer-spec. information

Customer : RVI

Motor : MIDRO6.20.45 B/3

Power KW : 195.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

test only : +- :.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance "NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 10.70

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 157.0

,	
Tolerance	Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : 5.0 Check tolerance
distributed settings . The	cm3/1000s. : 9.0
Check tolerance	,,,,
cm3/1000s. : + 4.0	
+	RATED SPEED
Spreed	
Tolerance + cm3/1000 strokes : 5.0 +	andral laws
cm3/1000 strokes : 5.0 +	control lever position degree : 300.0
Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 9.0	total alloc degree Tab
+	rack travel mm : -1.00
2nd speed rpm : 275	Rated speed rpm : 1125
<u> </u>	Tolerance 1/min : +- 5
Rack travel in mm: -5.20	
Tolerance mm : +- 0.20	rack travel mm : -6.70
Del. quantity + cm3/1000 strokes : 25.0 +	Rated speed rpm : 1220 Tolerance 1/min : +- 15
Tolerance	Total ance Trimin
cm3/1000 strokes : + 2.0	rack travel mm : -10.20
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : + 5.0	Rated speed rpm : 1350
Spreed +	
Tolerance +	LOUTDIE
cm3/1000 strokes : 8.0	LOW IDLE
cm3/1000s. : 12.0	
12.0	control lever
+	position degree : 247.0
(B) SETTING OF INJECTION PUMP	tolerance degree : +- 4.0
WITH GOVERNOR +	
+	Testing:
	Rated speed rpm : 275
GUIDE SLEEVE POSITION	rack travel mm : -5.20
+	Tolerance mm : + 0.10
Į.	
control lever	Rated speed rpm : 200
position degree : -1	
Rated speed rpm : 1220	CRT mm max. : < −3.60
Rack travel in mm: 10.50	
Tolerance mm : + 1.30	CONTINUOUS-ACTION CONTROL
+	
+	Rated speed rpm : 390
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 700	TORQUE CONTROL
Aneroid pressure	TONGOE CONTROL
hPa : 1000 +	Rated speed rpm : 1050
Del. quantity +	Tolerance mm : + 0.10
cm3/1000 strokes : 157.0 +	
Tolerance +	ANDDOTO / AL PITINO
cm3/1000 strokes : + 1.0 + Check tolerance +	ANEROID/ALTITUDE COMPENSATOR TEST
cm3/1000s. : +- 4.0	COMPENSATOR TEST
Spreed 4.0	
1	SETTING
	02112110

Rated speed rpm Pressure hPa	: 500 : 1000	† Tolerance 1/m
MEASUREMENT		STARTING FUEL
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : -1.35 : ← 0.15	Del. quantity cm3/1000 stro Tolerance cm3/1000 stro Check toleran
Rated speed rpm	: 500	cm3/1000s.
Pressure hPa rack travel mm Tolerance mm	: 130 : -1.00 : +- 0.10	<del></del>
Pressure hPa	: 240	+ LOW IDLE
rack travel mm Tolerance mm	: -0.35 : + 0.05	Rated speed r rack travel m Tolerance mm
START CUT-OUT		Del. quantity
Rated speed rpm Check		Tolerance cm3/1000 strol Check toleran
speed 1/min Rated speed rpm Check	: > 80 : < 210	cm3/1000s. Spreed Tolerance
speed 1/min	: < 230	cm3/1000 strol Check tolerand
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000s.
Aneroid pressure		Ŧ
hPa Rated speed rpm Del. quantity	: 1000 : 1050	‡
cm3/1000 strokes Tolerance	: 155.0	‡
cm3/1000 strokes Check tolerance	<b>:</b> + 3.0	‡
cm3/1000s.	: <del>+-</del> 6.0	Ì
Aneroid pressure	-	<del>-</del>
hPa Rated speed rpm	500	Ŧ
Del. quantity cm3/1000 strokes	: 108.0	‡
Tolerance cm3/1000 strokes	: + 1.0	‡
Check tolerance cm3/1000s.	: +- 4.0	‡
BREAKAWAY		†
~		+

+ Tolerance 1/min : + 5 L DELIVERY okes : 175.0 okes : + 15.0 nce : +- 19.0 rpm : 275 nm : −5.20 : ← 0.20 25.0 okes : kes : + 2.0 ice : +- 5.0 okes : 8.0 ce 12.0

Rack travel in mm : -1.00 Rated speed rpm : 1125

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402640828

Injection pump

Pump designation : PE12P120A520LS7826

EP type number : 0412620817

Governor

Governer design. : RQV350...1050PA870

: -13

Governer no. : 0421813934

Cust. part No. :

Customer—spec. information Customer : MB-NFZ

Motor : OM 444 LA Power KW : 620.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 160 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1688901019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 3.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 20.00 Tolerance mm : +- 1.00

Firing order : 12-1-5-9-8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240 : -285-300-345

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1050

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Rack travel in mm: 14.05

Tolerance mm : + 0.05	Check tolerance cm3/1000s. : +- 4.0
Del. quantity cm3/1000 strokes : 275.0	Spreed Tolerance
Tolerance	cm3/1000 strokes : 6.0 Check tolerance
cm3/1000 strokes : +- 1.0	cm3/1000s. : 10.0
Check tolerance cm3/1000s. : +- 4.0	RATED SPEED
Spreed Tolerance	control lever
cm3/1000 strokes : 6.0	position degree : 118.0 tolerance degree : +- 4.0
Check tolerance + 10.0 + 10.0	rack travel mm : 13.00
2nd speed rpm : 350	Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rack travel in mm: 5.60	rack travel mm : 4.00
Tolerance mm : + 0.30 + Del. quantity +	Rated speed rpm : 1185 Tolerance 1/min : +- 15
cm3/1000 strokes : 19.0 +	
Tolerance + 3.0 + 3.0	rack travel mm : 0.50 Tolerance mm : +- 0.50
Check tolerance + 6.0 +	Rated speed rpm : 1 0
Spreed	LOUTOUR
Tolerance + cm3/1000 strokes : 8.0 +	LOW IDLE
Check tolerance + cm3/1000s. : 12.0 +	control lever
T 12.0	position degree : 63.0 tolerance degree : + 4.0
(B) SETTING OF INJECTION PUMP +	Testing:
‡	Rated speed rpm : 350
CHIDE SLEEVE POSTITON	rack travel mm : 5.60 Tolerance mm : + 0.10
GUIDE SLEEVE POSITION	
control lever	Rated speed rpm : 250
position degree : -1 Rated speed rpm : 1150	CRT mm min. :> 7.30
Rack travel in mm: 16.50 Tolerance mm: + 1.30	CONTINUOUS-ACTION CONTROL
Toterance man	Rated speed rpm : 475
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 1050 Aneroid pressure	
hPa : 1800 +	Rated speed rpm : 1050 rack travel mm : 14.05
Del. quantity + cm3/1000 strokes : 275.0 +	rack travel mm : 14.05 Tolerance mm : +- 0.05
Tolerance +	Rated speed rpm : 750
cm3/1000 strokes : +- 1.0 +	rack travel mm : 14.05

Tolerance mm	: +- 0.05	Tolerance cm3/1000 strokes : 10.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000s. : 15.0
		BREAKAWAY
MEASUREMENT		Rack travel in mm: 13.00
Pressure hPa Rated speed rpm	500	Rated speed rpm : 1095 Tolerance 1/min : +- 5
Pressure hPa rack travel mm Tolerance mm	: 300 : 1.45 : + 0.05	STARTING FUEL DELIVERY
Pressure hPa	: 900	+ Rated speed rpm : 100
rack travel mm Tolerance mm	: 4.85 : +- 0.15	+ Del. quantity + cm3/1000 strokes : 340.0
	·	+ Tolerance - + cm3/1000 strokes : +- 10.0
START CUT-OUT		Check tolerance cm3/1000s. : +- 14.0
Rated speed rpm Check	: > 200	
speed 1/min	: > 180	+
Rated speed rpm Check	: < 310	+ LOW IDLE
speed 1/min	: < 330	+
		Rated speed rpm : 350 rack travel mm : 5.60
FUEL DELIVERY CHA	ARACTERISTICS	+ Tolerance mm : + 0.30
Aneroid pressure		+ Del. quantity + cm3/1000 strokes : 19.0
hPa	: 1800	+ Tolerance
Rated speed rpm Del. quantity	: 750	+ cm3/1000 strokes : +- 3.0 + Check tolerance
cm3/1000 strokes Tolerance	: 272.0	cm3/1000s. : + 6.0 + Spreed
cm3/1000 strokes Check tolerance	: +- 3.0	Tolerance cm3/1000 strokes : 8.0
cm3/1000s. Spreed	: +- 6.0	Check tolerance cm3/1000s. : 12.0
Tolerance	40.0	1 (2.5
cm3/1000 strokes Check tolerance	: 10.0	‡
cm3/1000s.	: 15.0	1
Aneroid pressure		+
hPa Rated speed rpm	500	‡
Del. quantity		+
cm3/1000 strokes Tolerance	: 125.0	İ
cm3/1000 strokes Check tolerance	: + 1.0	1
cm3/1000s. Spreed	: <del>+</del> 4.0	<del></del>

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.03.95 Edition Test oil : ISO 4113

Combination No. : 0402640844

Injection pump

Pump designation: PE12P12OA520LS7879

EP type number : 0412620841

Governor

Governer design. : RQV350...1200PA1167

Governer no. : 0421814107

Cust. part No. : 0250742402

Customer-spec. information

: MTU Customer

Motor : 12V183-03 Power KW : 845.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 : **←** 2.0 Tolerance °C

Overflow valve : 1417413025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

: 150 min. L/h Tolerance l/h: +- 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Lube oil : 1409918004 Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : .05
Tolerance mm : + 0.05

test only  $: \leftarrow 0.10$ 

Rack travel in mm: 10.50 : +- 0.50 Tolerance mm

: 12- 1- 5- 9- 8 : - 3- 4- 11- 10 : - 2- 6- 7 Firing order

Phasing : 0-45-60-105-120

: -165-180-225-240 : -285-300-345

Tolerance : + - 0.30

Check

tolerance \*NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1200

	40.00	† guide sleeve
Rack travel in mn Tolerance mm	n: 12.80 :+- 0.10	travel mm : 2.86
loterance mm	: +- 0.10	† Tolerance mm : +- 0.25
Del. quantity		+ Rated speed rpm : 470
cm3/1000 strokes	: 310.0	+ guide sleeve
		travel mm : 3.42
Tolerance	. 4.0	+ Tolerance mm : + 0.25
cm3/1000 strokes	: <del></del> 1.0	† Detail and June (30)
Check tolerance		+ Rated speed rpm : 620 + guide sleeve
cm3/1000s.	: +- 4.0	travel mm : 3.89
	• •	+ Tolerance mm : + 0.25
Spreed		+
Tolerance		+ Rated speed rpm : 1366
cm3/1000 strokes	: 8.0	+ guide sleeve
Charle dalamana		+ travel mm : 10.00
Check tolerance cm3/1000s.	: 12.0	+ Tolerance mm : + 0.25
	. 12.0	Rated speed rpm : 1470
2nd speed rpm	: 350	+ guide sleeve
		+ travel mm : 11.50
Rack travel in mm		+ Tolerance mm : +- 0.50
Tolerance mm	: +- 0.30	+
Del. quantity	22.2	
cm3/1000 strokes	: 20.0	+ GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes	: <del>+</del> 3.0	Ī
Check tolerance	5.0	control lever
cm3/1000s.	: +- 6.0	position degree : -1
Spreed		+ Rated speed rpm : 1310
Tolerance		+
cm3/1000 strokes	: 10.0	+ Rack travel in mm : 12.00
Check tolerance	45.0	+ Tolerance mm : + 1.30
cm3/1000s.	: 15.0	†
		FULL LOAD DELIVERY AT FULL LOAD STOP
(B) SETTING OF IN	JECTION PUMP	+ TOLE LOAD DELIVERY AT TOLE LOAD DIG
WITH GOVERNOR		+ Rated speed rpm : 1200
		+ Aneroid pressure
		+ hPa : 2000
GUIDE SLEEVE TRAV	EL	+ Del. quantity
Rated speed rpm	: 350	+ cm3/1000 strokes : 310.0 + Tolerance
guide sleeve	. 550	+ cm3/1000 strokes : + 1.0
travel mm	: 1.53	+ Check tolerance
Tolerance mm	: +- 0.15	+ cm3/1000s. : + 4.0
		+ Spreed
Rated speed rpm		
	: 1281	+ Tolerance
guide sleeve		Tolerance cm3/1000 strokes : 8.0
guide steeve travel mm	: 8.53	Tolerance cm3/1000 strokes : 8.0 Check tolerance
guide sleeve		Tolerance cm3/1000 strokes : 8.0
guide sleeve travel mm Tolerance mm	: 8.53 : + 0.20	Tolerance cm3/1000 strokes : 8.0 Check tolerance
guide steeve travel mm	: 8.53	Tolerance cm3/1000 strokes : 8.0 Check tolerance
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 8.53 : + 0.20 : 990 : 5.68	Tolerance
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 8.53 : + 0.20 : 990	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 8.53 : + 0.20 : 990 : 5.68 : + 0.25	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  RATED SPEED  control lever
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 8.53 : + 0.20 : 990 : 5.68	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  RATED SPEED

rack travel mm : 11.80 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00- Rated speed rpm : 1330- Tolerance 1/min : + 15  rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1470	Pressure hPa : - Rated speed rpm : 600 rack travel mm : 5.90 Tolerance mm : +- 0.15  Rated speed rpm : 600  Pressure hPa : 400 rack travel mm : 7.70 Tolerance mm : +- 0.05  Pressure hPa : 250 rack travel mm : 400
LOW IDLE	rack travel mm : 6.80 Tolerance mm : +- 0.10
control lever position degree : 68.0 tolerance degree : + 4.0  Testing:	Pressure hPa : 1600 rack travel mm : 12.00 Tolerance mm : + 0.05  Pressure hPa : 1200 rack travel mm : 10.45 Tolerance mm : + 0.10
Rated speed rpm : 350 + rack travel mm : 4.00 + Tolerance mm : + 0.10 +	
Rated speed rpm : 250	START CUT-OUT  Rated speed rpm : > 240
CRT mm min. :> 6.30	Check speed 1/min :> 220 Rated speed rpm : < 270
CONTINUOUS-ACTION CONTROL	Check speed 1/min : < 290
Rated speed rpm : 450	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL	Aneroid pressure hPa : 800
Rated speed rpm : 1200 + rack travel mm : 12.80 + Tolerance mm : + 0.10 +	Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 253.0
Rated speed rpm : 600 + rack travel mm : 9.50 + Tolerance mm : + 0.10	Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.5
ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 121.0
SETTING	Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm : 600 Pressure hPa : 2000	Check tolerance cm3/1000s. : +- 4.0
rack travel mn: 12.70 Tolerance mm : + 0.10	Spreed Tolerance cm3/1000 strokes : 10.0
MEASUREMENT +	

Check tolerance

: 15.0 cm3/1000s.

## **BREAKAWAY**

Rack travel in mm : 11.80 Rated speed rpm : 1245 Tolerance 1/min

## STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity cm3/1000 strokes : 360.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

: + 19.0 cm3/1000s.

## LOW IDLE

350 Rated speed rpm 4.00 rack travel mm 0.30 Tolerance mm

Del. quantity cm3/1000 strokes :

20.0

Tolerance cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Spreed

Tolerance

cm3/1000 strokes : 10.0

Check tolerance

cm3/1000s. 15.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 21.02.95 : ISO 4113

Combination No. : 0402646625

Injection pump

Pump designation : PE6P120A320RS7300

EP type number : 0412626886

Governor

Governer design. : RQV275...1000PA1077K

Governer no. : 0421815358

Cust. part No. : 1280165

Customer-spec. information

Customer : DAF

: WS 242 M Motor Power KW

: 242.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40

: + 2.0 Tolerance °C

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 140 Tolerance l/h : + 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 bar

1.5 Tolerance bar

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 5.35 : +- 0.05 Tolerance mm

test only :  $\leftarrow$  0.10

Rack travel in mm: 15.00

Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 15.05

: **←** 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 228.0	+ guide sleeve + travel mm : 3.08 + Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 400 guide sleeve
Check tolerance cm3/1000s. : + 4.0	travel mm : 3.92 Tolerance mm : +- 0.25
Spreed Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1310 guide sleeve travel mm : 13.50
Check tolerance cm3/1000s. : 9.0	Tolerance mm : + 0.50
2nd speed rpm : 275	GUIDE SLEEVE POSITION
Rack travel in mm: 6.20 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 17.0 Tolerance	control lever position degree : - 1 Rated speed rpm : 1140 Rack travel in mm : 14.00
cm3/1000 strokes : +- 3.0 Check tolerance	Tolerance mm : + 1.30
cm3/1000s. : + 6.0 - Spreed - Tolerance -	FULL LOAD DELIVERY AT F _L LOAD STOP
cm3/1000 strokes : 8.0 - Check tolerance - cm3/1000s. : 12.0 -	Rated speed rpm : 980 Aneroid pressure hPa : -
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Del. quantity cm3/1000 strokes : 228.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : +- 4.0 Spreed
Rated speed rpm : 275 guide sleeve - travel mm : 2.14 Tolerance mm : + 0.20	Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Rated speed rpm : 1045 - guide sleeve	RATED SPEED
travel mm : 9.83 - Tolerance mm : +- 0.15 -	- control lever - position degree : 119.0
Rated speed rpm : 689 - guide sleeve - travel mm : 6.43	tolerance degree : +- 4.0 - - rack travel mm : 14.00
Tolerance mm : + 0.25	Rated speed rpm : 1037 Tolerance 1/min : +- 8
Rated speed rpm : 284 guide sleeve - 2.27	rack travel mm : 4.00 Rated speed rpm : 1165
Tolerance mm : + 0.25  Rated speed rpm : 334	Tolerance 1/min : +- 15 - rack travel mm : 0.70
, ,	

Tolerance mm Rated speed rpm	: + 0.70 : 1250	+ MEASUREMENT + Pressure hPa : -
	·····	+ Rated speed rpm : 980
LOW IDLE		+ rack travel mm : 12.30
		Tolerance mm : +- 0.10
control lever		Rated speed rpm : 980
position degree	: 75.0	+
tolerance degree	: +- 4.0	+ Pressure hPa : 480
Testing:		rack travel mm : 14.35 Tolerance mm : + 0.05
resting:		+ Tolerance mm : ← 0.05
Rated speed rpm	: 275	+ Pressure hPa : 270
rack travel mm Tolerance mm	: 5.30	+ rack travel mm : 12.90
Tolerance mm	: ← 0.10	† Tolerance mm : + 0.10
rack travel mm	. 2.00	İ
Rated speed rpm	: 395	
Rated speed rpm Tolerance 1/min	: +- 20	+ FUEL DELIVERY CHARACTERISTICS
Dated aread nam	: 175	† Anomaid management
Rated speed rpm	. 173	Aneroid pressure
CRT mm min.	: > 8.50	Rated speed rpm : 750
		+ Del. quantity
700017 0017001		+ cm3/1000 strokes : 238.0
TORQUE CONTROL		+ Tolerance + cm3/1000 strokes : +- 2.0
Rated speed rpm	: 980	+ Check tolerance
rack travel mm		+ cm3/1000s. : + 5.0
Tolerance mm	: + 0.05	+ Spreed
Rated speed rpm	: 850	+ Tolerance + cm3/1000 strokes : 8.0
rack travel mm		+ Check tolerance
rack travel mm Tolerance mm	: <del>+</del> 0.10	+ cm3/1000s. : 12.0
<b>5</b> . <b>1</b>	750	+,
Rated speed rpm rack travel mm		+ Aneroid pressure + hPa : -
Tolerance mm		Rated speed rpm : 600
		+ Del. quantity
Rated speed rpm	: 600	+ cm3/1000 strokes : 157.0
rack travel mm Tolerance mm	: 14.60 : +- 0.10	+ Tolerance + cm3/1000 strokes : +- 1.0
TOTAL GLICE HIN	. +- 0.10	+ Check tolerance
Rated speed rpm	: 500	+ cm3/1000s. : + 4.0
rack travel mm	: 14.40	+
Tolerance mm	: + 0.10	+ BREAKAWAY
<del></del>		T DREADAWA!
ANEROID/ALTITUDE		+
COMPENSATOR TEST		+ Rack travel in mm : 14.00
		+ Rated speed rpm : 1037 + Tolerance 1/min : +- 8
SETTING		Total differential to the second
		+
Rated speed rpm		†
Pressure hPa rack travel mm	: 1500 : 15.05	I
Toterance mm	: +- 0.05	
_		LOW IDLE

Rated speed rpm	:	275
rack travel mm	:	6.20
Tolerance mm	: +-	0.10
Del. quantity		
cm3/1000 strokes	:	17.0
Tolerance		
cm3/1000 strokes	; +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402646655

Injection pump

Pump designation : PE6P120A320RS7361

EP type number : 0412626939

Governor

Governer design. : RQV275...1150PA1192K

Governer no. : 0421815452

Cust. part No. : 1304201/0

Customer-spec. information

Customer : DAF

Motor : RS/GS 245 M

Power KW : 245.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1417413000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 140 Tolerance L/h : ← 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : + 0.30

Check

tolerance °NW : +- 0.50

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

\*NW after s.o.d. : 0.3

BASIC SETTING

Rated speed rpm : 1130

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Book though in my a 1/ 50	guide sleeve
Rack travel in mm: 14.50	+ travel mm : 2.13
Tolerance mm : $\leftarrow$ 0.05	+ Tolerance mm : + 0.25
Dal manda.	
Del. quantity	+ Rated speed rpm : 350
cm3/1000 strokes : 239.0	† guide sleeve
	+ travel mm : 2.97
Tolerance	† Tolerance mm : + 0.25
$cm3/1000$ strokes : $\leftarrow$ 1.0	†
	Rated speed rpm : 460
Check tolerance	+ guide sleeve
cm3/1000s. : +- 4.0	travel mm : 3.90
	+ Tolerance mm : + 0.25
Spreed	†
Tolerance	+ Rated speed rpm : 1480
cm3/1000 strokes : 5.0	+ guide sleeve
	+ travel mm : 13.50
Check tolerance	+ Tolerance mm : +- 0.50
cm3/1000s. : 9.0	<b>†</b>
	<del></del>
2nd speed rpm : 275	+ GUIDE SLEEVE POSITION
	†
Rack travel in mm : 5.70	<del>†</del>
Tolerance mm : +- 0.20	+ control lever
Del. quantity	+ position degree : - 1
cm3/1000 strokes : 13.0	+ Rated speed rpm : 1275
Tolerance	+
cm3/1000 strokes : +- 3.0	+ Rack travel in mm : 13.50
Check tolerance	+ Tolerance mm : + 1.30
cm3/1000s. : +- 6.0	+
Spreed	
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 8.0	+
Tolerance cm3/1000 strokes : 8.0 Check tolerance	Rated speed rpm : 1130
Tolerance cm3/1000 strokes : 8.0	Rated speed rpm : 1130 Aneroid pressure
Tolerance cm3/1000 strokes : 8.0 Check tolerance	Rated speed rpm : 1130 Aneroid pressure hPa : 1500
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP	Rated speed rpm : 1130 Aneroid pressure hPa : 1500
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000S.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000S.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: 1.56 Tolerance mm: 1223 guide sleeve	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: 1.56 Tolerance mm: 1223 guide sleeve	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29 Tolerance mm: + 0.15	Rated speed rpm : 1130  Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 239.0  Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29 Tolerance mm: + 0.15  Rated speed rpm: 822	Rated speed rpm : 1130  Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 239.0  Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever position degree : 120.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: : 1.56 Tolerance mm: : + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: : 10.29 Tolerance mm: : + 0.15  Rated speed rpm: 822 guide sleeve	Rated speed rpm : 1130  Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 239.0  Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29 Tolerance mm: + 0.15  Rated speed rpm: 822 guide sleeve travel mm: 6.85	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : +- 4.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: : 1.56 Tolerance mm: : + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: : 10.29 Tolerance mm: : + 0.15  Rated speed rpm: 822 guide sleeve	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : +- 4.0  rack travel mm : 13.50
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29 Tolerance mm: + 0.15  Rated speed rpm: 822 guide sleeve travel mm: 6.85	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : +- 4.0
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29 Tolerance mm: + 0.15  Rated speed rpm: 822 guide sleeve travel mm: 6.85	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : +- 4.0  rack travel mm : 13.50
Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 275 guide sleeve travel mm: 1.56 Tolerance mm: + 0.20  Rated speed rpm: 1223 guide sleeve travel mm: 10.29 Tolerance mm: + 0.15  Rated speed rpm: 822 guide sleeve travel mm: 6.85 Tolerance mm: + 0.25	Rated speed rpm : 1130 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 239.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : +- 4.0  rack travel mm : 13.50 Rated speed rpm : 1207

rack travel mm : 4.00 Rated speed rpm : 1340 Tolerance 1/min : + 15  rack travel mm : 0.70 Tolerance mm : + 0.70	Rated speed rpm : 1130 Pressure hPa : 1500 rack travel mm : 14.50 Tolerance mm : + 0.05
Rated speed rpm : 1450	+ MEASUREMENT
	+ Pressure hPa : -
LOW IDLE	+ Rated speed rpm : 1130
	rack travel mm : 9.20 Tolerance mm : +- 0.20
control lever	+
position degree : 71.0 tolerance degree : + 4.0	Rated speed rpm : 1130
toterance degree : - 4.0	Pressure hPa : 740
Testing:	Pressure hPa : 740 rack travel mm : 13.05
Rated speed rpm : 275	+ Tolerance mm : +- 0.05
rack travel mm : 5.70	Pressure hPa : 320
Tolerance mm : + 0.10	+ rack travel mm : 10.00 + Tolerance mm : + 0.10
Rated speed rpm : 175	Total disce and
CRT mm min. :> 8.00	<u> </u>
	FUEL DELIVERY CHARACTERISTICS
CONTINUOUS-ACTION CONTROL	Aneroid pressure
Rated speed rpm : 375	+ hPa : 1500 + Rated speed rpm : 850
Nated Speed (pill : 313	+ Del. quantity
TOPOUE CONTROL	+ cm3/1000 strokes : 256.0
TORQUE CONTROL	Tolerance : + 2.0
Rated speed rpm : 1130	+ Check tolerance
rack travel mm : 14.50 Tolerance mm : +- 0.05	+ cm3/1000s. : + 5.0
roterance num : +- 0.03	+ Spreed + Tolerance
Rated speed rpm : 1025	+ cm3/1000 strokes : 8.0
rack travel mm : 14.50 Tolerance mm : + 0.10	+ Check tolerance + cm3/1000S. : 12.0
roter direction	+
Rated speed rpm : 850	+ Aneroid pressure
rack travel mm : 14.20 Tolerance mm : +- 0.10	+ hPa : - Rated speed rpm : 600
	+ Del. quantity
Rated speed rpm : 650 rack travel mm : 13.20	+ cm3/1000 strokes : 154.0 + Tolerance
rack travel mm : 13.20 Tolerance mm : +- 0.10	cm3/1000 strokes : +- 1.0
	+ Check tolerance + cm3/1000s. : +- 4.0
Rated speed rpm : 500 rack travel mm : 12.85	+ cm3/1000s. : +- 4.0
rack travel mm : 12.85 Tolerance mm : + 0.10	
	† BREAKAWAY
ANEROID/ALTITUDE	Į
COMPENSATOR TEST	Rack travel in mm: 13.50
	+ Rated speed rpm : 1207 + Tolerance 1/min : +- 5
SETTING	+

# LOW IDLE

Rated speed rpm 275 5.70 rack travel mm : +- 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance 12.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402646769

Injection pump

Pump designation : PE6P12OA32OLS7837

: -10

EP type number : 0412626855

Governor

Governer design. : RQV300...950PA1168

: -5

Governer no. : 0421814132

Cust. part No. : 0260740002

Customer-spec. information Customer : MB-NFZ Motor : OM441 LA Power KW : 250.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 80 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Prestroke mm : 5.25 Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance :  $\leftarrow$  0.30

Check

tolerance "NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

**CO6** 

	1	guide sleeve	
<del>-</del> -		travel mm	: 5.03
Rack travel in mm : Tolerance mm : H	15.10 ← 0.05	Tolerance nan	: + 0.25
Del. quantity		Rated speed rpm guide sleeve	: 790
cm3/1000 strokes :	252.0	travel mm Tolerance mm	: 6.16 : + 0.25
Tolerance cm3/1000 strokes : +	⊢ 1.0	Rated speed rpm	: 1103
Check tolerance	+	guide sleeve travel mm	: 10.00
	<b>-</b> 4.0	Tolerance mm	: + 0.25
Spreed Tolerance	‡	Rated speed rpm guide sleeve	: 1200
cm3/1000 strokes :	5.0	travel mm Tolerance mm	: 11.50 : + 0.50
Check tolerance cm3/1000s. :	9.0		
2nd speed rpm :	300	GUIDE SLEEVE POSIT	TION
Deal traval in m	<b>1</b> 20	aantus) lavas	
	6.20 + - 0.30 +	control lever	. 1
Tolerance mm : + Del. quantity	- 0.30 T	position degree Rated speed rpm	: - 1 : 1060
cm3/1000 strokes :	19.0 I	Rated speed rom	1000
Tolerance	I	Rack travel in mm	: 14.10
	- 3.0 <sup>⊥</sup>	Tolerance mm	: +- 1.30
Check tolerance	1	TOTE AT ICE THAT	. 1 1.50
	- 6.0		
CMS/THERIS. : +	- U.H +		
cm3/1000s. : + Spreed Tolerance	- 0.0	FULL LOAD DELIVERY	AT FULL LOAD STOP
Spreed Tolerance cm3/1000 strokes :	6.0	Rated speed rpm	AT FULL LOAD STOP: 550
Spreed Tolerance	+	Rated speed rpm Aneroid pressure hPa	
Spreed Tolerance cm3/1000 strokes : Check tolerance	6.0 +	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 550 : 1100 : 252.0
Spreed Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :	6.0 +	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 550 : 1100 : 252.0
Spreed Tolerance cm3/1000 strokes : Check tolerance cm3/1000S. :  (B) SETTING OF INJECT	6.0 +	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 550 : 1100 : 252.0
Spreed Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL	6.0 10.0 TON PUMP	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance	: 550 : 1100 : 252.0 : + 1.0 : + 4.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve	6.0 10.0 TION PUMP	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm:	6.0 10.0 TION PUMP	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 550 : 1100 : 252.0 : + 1.0 : + 4.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm:	6.0 10.0 TION PUMP 300 1.26 - 0.20	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm: Tolerance mm: +  Rated speed rpm: guide sleeve	6.0 10.0 TION PUMP 300 1.26 - 0.20	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm: Tolerance mm: +  Rated speed rpm: guide sleeve travel mm: +	6.0 10.0 10N PUMP 300 1.26 - 0.20 1009 8.28	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  RATED SPEED	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm: Tolerance mm: +  Rated speed rpm: guide sleeve travel mm: +	6.0 10.0 TON PUMP 300 1.26 - 0.20 1009 8.28 - 0.15	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm: Tolerance mm: Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve	6.0 10.0 TON PUMP 300 1.26 - 0.20 1009 8.28 - 0.15 575	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  RATED SPEED  control lever position degree tolerance degree	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0 : 9.0 : 123.0 : + 4.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm: Tolerance mm: HRated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm:	6.0 10.0 10N PUMP 300 1.26 - 0.20 1009 8.28 - 0.15 575 4.46	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  RATED SPEED  control lever position degree tolerance degree rack travel mm	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0 : 9.0 : 4.0 : + 4.0 : 123.0 : + 4.0
Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.:  (B) SETTING OF INJECT WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: guide sleeve travel mm: Tolerance mm: Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve travel mm: Tolerance mm:  Rated speed rpm: guide sleeve	6.0 10.0 TON PUMP 300 1.26 - 0.20 1009 8.28 - 0.15 575	Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  RATED SPEED  control lever position degree tolerance degree	: 550 : 1100 : 252.0 : + 1.0 : + 4.0 : 5.0 : 9.0 : 123.0 : + 4.0

rack travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15  rack travel mm : 0.70 Tolerance mm : + 0.70 Rated speed rpm : 1200	Pressure hPa : - Rated speed rpm : 400 rack travel mm : 9.15 Tolerance mm : + 0.20  Rated speed rpm : 400  Pressure hPa : 150
LOW IDLE	rack travel mm : 10.05 Tolerance mm : + 0.20
control lever position degree : 79.0 tolerance degree : + 4.0	Pressure hPa : 550 rack travel mm : 13.85 Tolerance mm : + 0.20
Testing:	START CUT-OUT
Rated speed rpm : 300 rack travel mm : 3.50 Tolerance mm : + 0.10 Rated speed rpm : 200 CRT mm min. : > 5.70	Rated speed rpm : > 100 Check speed 1/min : > 80 Rated speed rpm : < 220 Check speed 1/min : < 240
+	FUEL DELIVERY CHARACTER `TICS
CONTINUOUS—ACTION CONTROL	Anonoid property
Rated speed rpm : 325	Aneroid pressure hPa : 1100 Rated speed rpm : 950
TORQUE CONTROL	Del. quantity cm3/1000 strokes : 242.0 Tolerance
Rated speed rpm : 550 rack travel mm : 15.10 Tolerance mm : + 0.05	cm3/1000 strokes : + 3.0 Check tolerance cm3/1000S. : + 6.0 Spreed
Rated speed rpm : 950 rack travel mm : 15.10 Tolerance mm : + 0.10	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Rated speed rpm : 400 rack travel mm : 13.85 Tolerance mm : +- 0.20	Aneroid pressure hPa : 550 Rated speed rpm : 400 Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST	cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.5
SETTING	Check tolerance cm3/1000s. : + 4.5
Rated speed rpm : 400 Pressure hPa : 1100 rack travel mm : 15.10 Tolerance mm : + 0.05  MEASUREMENT	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 135.0 Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 **BREAKAWAY** Rack travel in mm: 14.10 Rated speed rpm Tolerance 1/min STARTING FUEL DELIVERY 100 Rated speed rpm Del. quantity cm3/1000 strokes : 235.0 Tolerance cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 24.0 LOW IDLE 300 Rated speed rpm 6.20 rack travel mm 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402646770

Injection pump

Pump designation : PE6P120A320LS7836

: -10

EP type number : 0412626854

Governor

Governer design. : RQV300...1050PA1168

: -7

Governer no. : 0421814143

Cust. part No. : 0250749902

Customer—spec. information Customer : MB-NFZ Motor : 0M401 LA Power KW : 200.0

Power kw : 200.

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 75 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 1.0 Tolerance bar : + 1.0

Prestroke mm : 5.55Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 20.50Tolerance mm : +- 0.50

Firing order : 6-3-5-2-4-

: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

	+ guide sleeve
	+ travel mm : 4.53
Rack travel in mm: 13.00	+ Tolerance mm : + 0.25
Tolerance mm : +- 0.05	†
Dal mandal.	Rated speed rpm : 608
Del. quantity	guide sleeve
cm3/1000 strokes : 190.0	+ travel mm : 5.03
Telepope	+ Tolerance mm : + 0.25
Tolerance	Data dama and annu a cons
cm3/1000 strokes : +- 1.0	+ Rated speed rpm : 820
Charle de Langue	+ guide sleeve
Check tolerance	+ travel mm : 6.13
cm3/1000s. : + 4.0	+ Tolerance mm : + 0.25
Canad	Patrid and all many 4407
Spreed	+ Rated speed rpm : 1183
Tolerance	+ guide sleeve
cm3/1000 strokes : 5.0	+ travel mm : 10.00
Olas I A I america	+ Tolerance mm : + 0.25
Check tolerance	Data dama dama dama
cm3/1000s. : 9.0	+ Rated speed rpm : 1280
2.1	+ guide sleeve
2nd speed rpm : 300	+ travel mm : 11.50
	+ Tolerance mm : $+$ 0.50
Rack travel in mm : 5.80	+
Tolerance mm : + 0.30	
Del. quantity	+ GUIDE SLEEVE POSITION
cm3/1000 strokes : 19.0	†
Tolerance	+
cm3/1000 strokes : + 3.0	+ control lever
Check tolerance	+ position degree : - 1
cm3/1000s. : + 6.0	+ Rated speed rpm : 1145
Spreed	+
Tolerance	+ Rack travel in mm : 12.00
cm3/1000 strokes : 6.0	+ Tolerance mm : + 1.30
Check tolerance	+
cm3/1000s. : 10.0	
	+ FULL LOAD DELIVERY AT FULL LOAD STOP
4-1	†
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1050
WITH GOVERNOR	+ Aneroid pressure
	+ hPa : 800
·	+ Del. quantity
GUIDE SLEEVE TRAVEL	+ cm3/1000 strokes : 190.0
	+ Tolerance
Rated speed rpm : 300	+ cm3/1000 strokes : +- 1.0
guide sleeve	+ Check tolerance
travel mm : 1.29	+  cm3/1000s. : $+- 4.0$
Tolerance mm : ← 0.25	+ Spreed
	† Tolerance
Rated speed rpm : 1107	+ cm3/1000 strokes : 5.0
guide sleeve	+ Check tolerance
travel mm : 8.52	+ cm3/1000s. : 9.0
Tolerance mm : + 0.25	<del>†</del>
	†
Rated speed rpm : 1640	+ RATED SPEED
guide sleeve	†
travel mm : 25.13	†
Tolerance mm : + 0.25	+ control lever
•	position degree : 120.0
Rated speed rpm : 558	tolerance degree : + 4.0

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm LOW IDLE	: 4.00 : 1170 : ← 15	Pressure hPa : - Rated speed rpm : 400 rack travel mm : 10.55 Tolerance mm : + 0.15  Rated speed rpm : 400  Pressure hPa : 200 rack travel mm : 11.40 Tolerance mm : + 0.15  Pressure hPa : 350 rack travel mm : 12.25 Tolerance mm : + 0.15
control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm	: +- 4.0 : 300	START CUT-OUT  Rated speed rpm : > 100 Check speed 1/min : > 80 Rated speed rpm : < 220 Check speed 1/min : < 240
Rated speed rpm	: 200	- FUEL DELIVERY CHARACTERISTICS
CRT mm min.  CONTINUOUS-ACTION  Rated speed rpm	CONTROL	Aneroid pressure hPa : 350 Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 150.0 Tolerance cm3/1000 strokes : +- 1.5
TORQUE CONTROL		- Check tolerance - cm3/1000s. : + 4.5
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: 13.00 : + 0.05 : 550	Aneroid pressure  hPa : 800  Rated speed rpm : 550  Del. quantity  cm3/1000 strokes : 189.0  Tolerance  cm3/1000 strokes : + 3.0  Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST	<del> </del>	Spreed Tolerance cm3/1000 strokes : 8.0
SETTING	#	Check tolerance cm3/1000S. : 12.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm		Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 127.0

Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : + 5

# STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : + 20.0

Check tolerance cm3/1000s. : + 24.0

### LOW IDLE

Rated speed rpm 300 rack travel mm 5.80 Tolerance mm : **←** 0.30 Del. quantity 19.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.03.95 : ISO 4113

Combination No. : 0402646771

Injection pump

Pump designation : PE6P12OA32OLS7836-2

EP type number : 0412626944

Governor

Governer design. : RQV300...1050PA1168

Governer no.

: 0421814141

Cust. part No. : 0250749802

Customer-spec. information Customer : M8-NFZ : 0M401 LA Motor Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1417413047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : +- 10.0 Tolerance L/h

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 bar Tolerance bar

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter:

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : +-5.55 : +- 0.05

test only : + 0.10

Rack travel in mm : 20.50 Tolerance mm :+0.50

Firing order : 6-3-5-2-4-

: 1-

: 0-60-120-180-240 Phasing

: -300-360 : +- 0.30 Tolerance

Check

tolerance "NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

		+ guide sleeve
Rack travel in m		+ travel mm : 5.03
Tolerance mm	: +- 0.05	+ Tolerance mm : + 0.25
		+
Del. quantity		+ Rated speed rpm : 820
cm3/1000 strokes	: 173.0	+ guide steeve
		+ travel mm : 6.13
Tolerance		+ Tolerance mm : + 0.25
cm3/1000 strokes	: <b>←</b> 1.0	+
		+ Rated speed rpm : 1183
Check tolerance		+ guide sleeve
cm3/1000s.	: <del></del> 4.0	+ travel mm : 10.00
		+ Tolerance mm : + 0.25
Spreed		
Tolerance		+ Rated speed rpm : 1280
cm3/1000 strokes	: 5.0	duide sleeve
		+ travel mm : 11.50
Check tolerance		+ Tolerance mm : + 0.50
cm3/1000s.	: 9.0	1 roter arice min
	. 7.0	
2nd speed rpm	: 300	→ GUIDE SLEEVE POSITION
End Speed (pill	. 300	GOIDE SEEENE LOSTITOIA
Rack travel in m	n: 5.80	$oxed{\mathrm{I}}$
Tolerance mm	; +- 0.30	- control lever
Del. quantity	0.50	position degree : - 1
cm3/1000 strokes	: 19.0	Rated speed rpm : 1150
Tolerance	. 17.0	T kated speed rpm : 1150
cm3/1000 strokes	: + 3.0	T Book thought in mm . 11 /0
	. +- 3.0	+ Rack travel in mm: 11.40
Check tolerance		† Tolerance mm : + 1.30
cm3/1000s.	: + 6.0	†
Spreed	: +- 0.0	FIRE LOAD DELTUEDY AT FIRE LOAD CTOP
Spreed Tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed Tolerance cm3/1000 strokes		+
Spreed Tolerance cm3/1000 strokes Check tolerance	: 6.0	+ Rated speed rpm : 1050
Spreed Tolerance cm3/1000 strokes		Rated speed rpm : 1050 Aneroid pressure
Spreed Tolerance cm3/1000 strokes Check tolerance	: 6.0	Rated speed rpm : 1050 Aneroid pressure hPa : 700
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 6.0 : 10.0	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN	: 6.0 : 10.0	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 6.0 : 10.0	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0 Tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN	: 6.0 : 10.0	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0 Tolerance cm3/1000 strokes : +- 1.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR	: 6.0 : 10.0 WECTION PUMP	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN	: 6.0 : 10.0 WECTION PUMP	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV	: 6.0 : 10.0 WECTION PUMP	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV	: 6.0 : 10.0 WECTION PUMP	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve	: 6.0 : 10.0 WECTION PUMP	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV	: 6.0 : 10.0 NJECTION PUMP FEL : 300 : 1.29	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve	: 6.0 : 10.0 WECTION PUMP	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm	: 6.0 : 10.0 NJECTION PUMP FEL : 300 : 1.29	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm	: 6.0 : 10.0 NJECTION PUMP FEL : 300 : 1.29	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	: 6.0 : 10.0 NJECTION PUMP /EL : 300 : 1.29 : + 0.20	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.0 : 10.0 NJECTION PUMP /EL : 300 : 1.29 : + 0.20	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000 strokes : 9.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 6.0 : 10.0 NECTION PUMP /EL : 300 : 1.29 : + 0.20 : 1107	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000 strokes : 9.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm guide sleeve travel mm	: 6.0 : 10.0 DECTION PUMP  FEL : 300 : 1.29 : + 0.20 : 1107 : 8.51	Rated speed rpm : 1050  Aneroid pressure  hPa : 700  Del. quantity  cm3/1000 strokes : 173.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000s. : 9.0  RATED SPEED
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 6.0 : 10.0 DECTION PUMP  FEL : 300 : 1.29 : + 0.20 : 1107 : 8.51 : + 0.15	Rated speed rpm : 1050  Aneroid pressure hPa : 700  Del. quantity cm3/1000 strokes : 173.0  Tolerance cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  RATED SPEED
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm Guide sleeve travel mm Tolerance mm Rated speed rpm Rated speed rpm	: 6.0 : 10.0 DECTION PUMP  FEL : 300 : 1.29 : + 0.20 : 1107 : 8.51	Rated speed rpm : 1050  Aneroid pressure hPa : 700  Del. quantity cm3/1000 strokes : 173.0  Tolerance cm3/1000strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 119.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.0 : 10.0 DECTION PUMP  FEL : 300 : 1.29 : + 0.20 : 1107 : 8.51 : + 0.15 : 558	Rated speed rpm : 1050  Aneroid pressure hPa : 700  Del. quantity cm3/1000 strokes : 173.0  Tolerance cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  RATED SPEED
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.0 : 10.0 NJECTION PUMP  FEL  : 300  : 1.29 : + 0.20 : 1107  : 8.51 : + 0.15 : 558 : 4.53	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever position degree : 119.0 tolerance degree : + 4.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.0 : 10.0 DECTION PUMP  FEL : 300 : 1.29 : + 0.20 : 1107 : 8.51 : + 0.15 : 558	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  RATED SPEED  rack travel mm : 11.40
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.0 : 10.0 NJECTION PUMP  VEL  : 300  : 1.29  : + 0.20  : 1107  : 8.51 : + 0.15  : 558  : 4.53 : + 0.25	Rated speed rpm : 1050  Aneroid pressure hPa : 700  Del. quantity cm3/1000 strokes : 173.0  Tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever position degree : 119.0 tolerance degree : + 4.0  rack travel mm : 11.40 Rated speed rpm : 1095
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.0 : 10.0 NJECTION PUMP  FEL  : 300  : 1.29 : + 0.20 : 1107  : 8.51 : + 0.15 : 558 : 4.53	Rated speed rpm : 1050 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 173.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  RATED SPEED  rack travel mm : 11.40

rack travel mm : Rated speed rpm : 1 Tolerance 1/min : +  rack travel mm : Tolerance mm : + Rated speed rpm : 1  LOW IDLE	1170 15 	Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm	: 200 : 11.45 : + 0.20
control lever position degree : tolerance degree : +  Testing:  Rated speed rpm : rack travel mm : Tolerance mm : +	4.0	START CUT-OUT  Rated speed rpm Check speed 1/min Rated speed rpm Check speed 1/min	: > 100 : > 80 : < 220
Rated speed rpm :  CRT mm min. :>	+	FUEL DELIVERY CHA	RACTERISTICS: 200
CONTINUOUS-ACTION CONTR	1	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 119.0
TORQUE CONTROL	+	Check tolerance cm3/1000s.	: +- 4.5
Tolerance mm : +- Rated speed rpm :	12.40 0.05 550	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	
rack travel mm : Tolerance mm :+-	12.40 +	Tolerance cm3/1000 strokes Check tolerance	
ANEROID/ALTITUDE COMPENSATOR TEST	<del></del>	Spreed Tolerance cm3/1000 strokes	: ← 6.0 : 8.0
SETTING	†	Check tolerance cm3/1000s.	: 12.0
Rated speed rpm : 4 Pressure hPa : 7 rack travel mm : 7 Tolerance mm : +		Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
Pressure hPa : Rated speed rpm :	11.05	cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +- 1.0 : +- 4.0

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0 :

#### **BREAKAWAY**

Rack travel in mm : 11.40 Rated speed rpm 1095 Tolerance 1/min

#### STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : +- 19.0

#### LOW IDLE

300 Rated speed rpm 5.80 rack travel mm

Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.03.95 : ISO 4113 Test oil

Combination No. : 0402646970

Injection pump

Pump designation : PE6P120A320RS7248

: -10Y

EP type number : 0412626902

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0421813920

Cust. part No. : 1248046/4

Customer-spec. information

Customer : DAF

Motor : RS 180 L : 180.0 Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 : + 2.0 Tolerance °C

Overflow valve : 1417413025

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

: 130 min. L/h Tolerance l/h: + 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : .co

test only :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : + - 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 10.75 Tolerance mm : +- 0.05

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		+ Rated speed rpm : 365
Del. quantity		+ Rated speed rpm : 365 + guide sleeve
cm3/1000 strokes	: 147.5	travel mm : 2.52
CIID TOOD SETORES	. (41.5	+ Tolerance mm : + 0.25
Tolerance		
cm3/1000 strokes	: + 1.0	Rated speed rpm : 450
Chor 1000 Strokes		+ guide steeve
Check tolerance	<del></del>	travel mm : 3.07
cm3/1000s.	: +- 4.0	+ Tolerance mm : +- 0.25
CM3/10003:	4.0	T Total dille likii . += 0.25
Spreed		Rated speed rpm : 1500
Tolerance		guide sleeve
cm3/1000 strokes	: 5.0	travel mm : 11.50
	. 5.5	+ Tolerance mm : + 0.50
Check tolerance		Total alloc limit
cm3/1000s.	: 9.0	
		+ GUIDE SLEEVE POSITION
2nd speed rpm	: 275	-
		1
Rack travel in m	n: 5.40	+ control lever
Tolerance mm		+ position degree : - 1
Del. quantity		+ Rated speed rpm : 1340
cm3/1000 strokes	: 16.0	+
Tolerance		+ Rack travel in mm: 9.70
cm3/1000 strokes	: <b>←</b> 3.0	+ Tolerance mm : + 1.30
Check tolerance		+
cm3/1000s.	: <del></del> 6.0	+
Spreed		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance		+
cm3/1000 strokes	: 8.0	+ Rated speed rpm : 1000
Check tolerance	42.0	+ Aneroid pressure
cm3/1000s.	: 12.0	+ hPa : 1000
		+ Del. quantity
(D) CETTING OF TA	LIECTION DUMP	+ cm3/1000 strokes : 147.5
(B) SETTING OF IN	ATECITON POWE	+ Tolerance
WITH GOVERNOR		+ cm3/1000 strokes : +- 1.0
		+ Check tolerance
GUIDE SLEEVE TRAV	/E1	+  cm3/1000s. : + 4.0
GOIDE SLEEVE TRAV	/CL	+ Spreed
Rated speed rpm	: 275	+ cm3/1000 strokes : 5.0
guide sleeve	. 213	Check tolerance
travel mm	: 1.44	- cm3/1000s. : 9.0
Tolerance mm	: + 0.15	1
	0.12	
Rated speed rpm	: 1206	+ RATED SPEED
guide sleeve		+
travel mm	: 8.25	+
Tolerance mm	: <del>+-</del> 0.20	+ control lever
		+ position degree : 120.0
Rated speed rpm	<b>:</b> 799	+ tolerance degree : + 4.0
guide sleeve	F 4	†
travel mm	5.21	+ rack travel mm : 9.75
Tolerance mm	: + 0.25	+ Rated speed rpm : 1182
Dadad aussal auss	. 715	+ Tolerance 1/min : + 5
Rated speed rpm	: 315	I nack that all mm . 4.00
guide sleeve travel mm	: 1.98	rack travel mm : 4.00
Tolerance mm	: + 0.25	Rated speed rpm : 1280 Tolerance 1/min : + 15
TO CET OFFICE TIME		Total and militimate 15
		ı

rack travel mm Tolerance mm Rated speed rpm	: 0.70 : + 0.70 : 1450
LOW IDLE	
control lever position degree tolerance degree	: 83.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 4.70 : + 0.10
Rated speed rpm	: 175
CRT mm min.	: > 7.40
CONTINUOUS-ACTION	I CONTROL
Rated speed rpm	: 340
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 10.75 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 1000 : 10.75 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 600 : 9.50 : + 0.10
Rated speed rpm	: 600
Pressure hPa	: 260

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rack travel mm Tolerance mm	: 10.35 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 190 : 9.90 : ← 0.10
FUEL DELIVERY	CHARACTERISTICS
Aneroid pressur	re :

Aneroid pressure
hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 121.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

# **BREAKAWAY**

Rack travel in mm : 9.75
Rated speed rpm : 1 2
Tolerance 1/min : + 5

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm	: : +-	275 5.40 0.10
Del. quantity cm3/1000 strokes Tolerance	:	16.0
cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000S. Spreed	: +-	6.0
Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402646971

Injection pump

Pump designation : PE6P120A320RS7218

: -10Z

EP type number : 0412626892

Governor

Governer design. : RQV275...1000PA939

: -2

Governer no. : 0421813986

Cust. part No. : 1249337/5

Customer-spec. information

Customer : DAF

Motor : WS 242 L

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 105
Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 7.35
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 14.50
Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.95 Tolerance mm : + 0.05

+	Rated speed rpm : 351
Del. quantity	guide sleeve
cm3/1000 strokes : 210.0 +	travel mm : 2.45
	Tolerance mm : $\leftarrow$ 0.25
Tolerance +	Data dama da a
cm3/1000 strokes : + 1.0 +	Rated speed rpm : 380 guide sleeve
Check tolerance	travel mm : 2.66
cm3/1000s. : +- 4.0	Tolerance mm : + 0.25
<u> </u>	
Spreed	Rated speed rpm : 1310
Tolerance	guide sleeve
cm3/1000 strokes : 5.0 +	travel mm : 11.50
Check tolerance	Tolerance mm : $\leftarrow$ 0.50
cm3/1000s. : 9.0	
3.37 (333)	GUIDE SLEEVE POSITION
2nd speed rpm : 275	
+	
Rack travel in mm: 6.10	control lever
Tolerance mm : + 0.10 + Del. quantity	position degree : - 1 Rated speed rpm : 1130
cm3/1000 strokes : 17.0	Rated speed rpm : 1130
Tolerance	Rack travel in mm : 13.90
cm3/1000 strokes : + 3.0	Tolerance mm : + 1.30
Check tolerance	
cm3/1000s. : + 6.0	
Spreed +	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance +	n
cm3/1000 strokes : 8.0 + Check tolerance +	Rated speed rpm : 850
cm3/1000s. : 12.0	Aneroid pressure hPa : 1000
12.0	Del. quantity
1	cm3/1000 strokes : 210.0
(B) SETTING OF INJECTION PUMP	Tolerance
WITH GOVERNOR +	cm3/1000 strokes : $+-$ 1.0
+	Check tolerance
CUTOE CLEENE TRAVEL	cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	Spreed Tolerance
Rated speed rpm : 275	cm3/1000 strokes : 5.0
guide sleeve	Check tolerance
travel mm : 1.34 +	cm3/1000s. : 9.0
Tolerance mm : + 0.25	
Rated speed rpm : 1058 +	DATEN SPEEN
Rated speed rpm : 1058 + guide sleeve +	RATED SPEED
travel mm : 8.05	
Tolerance mm : + 0.25	control lever
+	position degree : 119.0
Rated speed rpm : 676	tolerance degree : +- 4.0
guide sleeve	40.05
travel mm : 4.49	rack travel mm : 12.95
Tolerance mm : + 0.25	Rated speed rpm : 1042 Tolerance 1/min : +- 5
Rated speed rpm : 301	roterance militi : T 3
guide sleeve	rack travel mm : 4.00
travel mm : 1.78	Rated speed rpm : 1160
Tolerance mm : + 0.25	Tolerance 1/min : + 15
+	

rack travel mm Tolerance mm Rated speed rpm	: +- 0.70
LOW IDLE	
control lever position degree tolerance degree	: 82.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.00 : + 0.10
Rated speed rpm	: 175
CRT mm min.	: > 7.50
CONTINUOUS-ACTION	N CONTROL
Rated speed rpm	: 325
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 13.95
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 13.95 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 1000 : 13.95 : +- 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 600 : 11.80 : + 0.10
Rated speed rpm	: 600
Pressure hPa	: 420

: 13.35 rack travel mm : +- 0.05 Tolerance mm 300 Pressure hPa 12.55 rack travel mm Tolerance mm : + - 0.10FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm 600 Del. quantity cm3/1000 strokes : 153.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : +-4.0 BREAKAWAY Rack travel in mm: 12.95 Rated speed rpm : 1 2 Tolerance 1/min : + LOW IDLE Rated speed rpm : 275 rack travel mm 6.10 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402646973

Injection pump

Pump designation : PE6P120A320RS7218

: -10Z

EP type number : 0412626892

Governor

Governer design. : RQ275/1000PA936-2

Governer no. : 0421801633

Cust. part No. : 1249172/5

Customer-spec. information

: DAF Customer : WS 242 L Motor

Power KW : 242.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1417413025

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h 110 : +- 10.0 Tolerance l/h

Test nozzle holde

: 1688901105 assembly

Opening pressure

bar 208.5 Tolerance bar : +- 1.5 Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 5.35 : + 0.05Tolerance mm

: +- 0.10 test only

Rack travel in mm: 14.50 Tolerance mm : + 0.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm 850

Rack travel in mm : 13.95

Tolerance mm : +- 0.05	+
	Rated speed rpm : 450
Del. quantity cm3/1000 strokes : 210.0	+ guide sleeve + travel mm : 6.00
CIBY 1000 STrokes : 210.0	+ Tolerance mm : +- 0.10
Tolerance	1
$cm3/1000$ strokes : $\leftarrow$ 1.0	+ Rated speed rpm : 1220
Check tolerance	<pre>+ guide sleeve + travel mm : 11.50</pre>
cm3/1000s. : +- 4.0	+ Tolerance mm : +- 0.50
	+
Spreed Tolerance	CHART CLEENE DOCATION
cm3/1000 strokes : 5.0	+ GUIDE SLEEVE POSITION
	+
Check tolerance	+ control lever
cm3/1000s. : 9.0	<pre>+ position degree : - 1 + Rated speed rpm : 550</pre>
2nd speed rpm : 275	+ Nated Speed (pill : 350
	Rack travel in mm: 16.00
Rack travel in mm : 6.10 Tolerance mm : +- 0.10	† Tolerance mm : + 0.60
Del. quantity	
cm3/1000 strokes : 17.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : +- 3.0	Poted aread area
Check tolerance	+ Rated speed rpm : 850 + Aneroid pressure
cm3/1000s. : +- 6.0	→ hPa : 1000
Spreed	+ Del. quantity
Tolerance cm3/1000 strokes : 8.0	+ cm3/1000 strokes : 210.0 + Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0
cm3/1000s. : 12.0	- Check tolerance
	+ cm3/1000s. : +- 4.0 + Spreed
(B) SETTING OF INJECTION PUMP	Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : 5.0
	+ Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : 9.0
Rated speed rpm : 275 guide sleeve	+ RATED SPEED
travel mm : 1.64	I
Tolerance mm : + 0.10	- control lever
Detect aread area at 10/7	position degree : 109.0
Rated speed rpm : 1047 guide sleeve	tolerance degree : +- 4.0
travel mm : 6.43	rack travel mm : 12.95
Tolerance mm : + 0.10	Rated speed rpm : 1042
Rated speed rpm : 1000	† Tolerance 1/min : +- 8
guide sleeve	rack travel mm : 4.00
travel mm : 6.00	Rated speed rpm : 1135
Tolerance mm : +- 0.10	† Tolerance 1/min : + 15
Rated speed rpm : 356	Track travel mm : 0.70
guide sleeve	+ Tolerance mm : + 0.70
travel mm : 4.13	+ Rated speed rpm : 1250
Tolerance mm : + 0.10	†

#### LOW IDLE

control lever

position degree : 73.0 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : +- 20

Rated speed rpm : 175

CRT mm min. : > 6.50

# TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 13.95 Tolerance mm : + 0.05

Rated speed rpm : 1000 rack travel mm : 13.95 Tolerance mm : +- 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : + 0.05

# **MEASUREMENT**

Pressure hPa : Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 420 rack travel mm : 13.35 Tolerance mm : +- 0.05

Pressure hPa : 300

rack travel mm : 12.55 Tolerance mm : + 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 153.0

Tolerance

cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0

#### BREAKAWAY

Rack travel in mm : 12.95
Rated speed rpm : 1042
Tolerance 1/min : + 8

#### LOW IDLE

cm3/1000s.

Rated speed rpm 275 rack travel mm 6.10 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance

12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.03.95 Edition Test oil : ISO 4113

Combination No. : 0402646986

Injection pump

Pump designation: PE6P120A320RS7248

: -10Y

EP type number : 0412626902

Governor

Governer design. : RQ275/1150PA987

Governer no. : 0421801578

Cust. part No. : 1248043/4

Customer-spec. information

Customer : DAF

: RS 180 L Motor

Power KW : 180.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 : **←** 2.0 Tolerance °C

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde

: 1688901105 assembly

Opening pressure

: 208.5 bar Tolerance bar

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm: 14.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 10.75 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 147.5

Tolerance + cm3/1000 strokes : + 1.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : + 4.0	RATED SPEED
Spreed Tolerance	control lever
cm3/1000 strokes : 5.0	position degree : 190.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 9.0	rack travel mm : 9.75
2nd speed rpm : 275	Rated speed rpm : 1207 Tolerance 1/min : +- 8
Rack travel in mm: 5.40 Tolerance mm: + 0.10	rack travel mm : 4.00 Rated speed rpm : 1290
Del. quantity cm3/1000 strokes : 16.0	Tolerance 1/min : + 15 rack travel mm : 0.70
cm3/1000 strokes : + 3.0 Check tolerance	Tolerance mm : +- 0.70 Rated speed rpm : 1450
cm3/1000s. : +- 6.0 Spreed	
Tolerance cm3/1000 strokes : 8.0	LOW IDLE
Check tolerance cm3/1000s. : 12.0	control lever position degree : 74.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	tolerance degree : +- 4.0
WITH GOVERNOR	Testing: Rated speed rpm : 275
GUIDE SLEEVE POSITION	rack travel mm : 4.70 Tolerance mm : + 0.10
‡	rack travel mm : 2.00
control lever position degree : -1 Rated speed rpm : 550	Rated speed rpm : 340 Tolerance 1/min : +- 20
Rack travel in mm: 15.80	Rated speed rpm : 175
Tolerance mm : + 0.60	CRT mm min. :> 7.00
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 1000 Aneroid pressure	Rated speed rpm : 1000 rack travel mm : 10.75
hPa : 1000 +	Tolerance mm : +- 0.05
cm3/1000 strokes : 147.5 + Tolerance +	Rated speed rpm : 1150 rack travel mm : 10.75
cm3/1000 strokes : +- 1.0 + Check tolerance +-	Tolerance mm : + 0.10
cm3/1000s. : + 4.0 + Spreed + Tolerance	
cm3/1000 strokes : 5.0	

# ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 600 Pressure hPa 1000 10.75 rack travel mm : **←** 0.05 Tolerance mm **MEASUREMENT** Pressure hPa Rated speed rpm 600 9.50 rack travel mm Tolerance mm : + 0.10Rated speed rpm 600 Pressure hPa 260 rack travel mm 10.35 : **←** 0.05 Tolerance mm 190 Pressure hPa 9.90 rack travel mm : + 0.10Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 600 Rated speed rpm Del. quantity cm3/1000 strokes : 121.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. 4.0 **BREAKAWAY** Rack travel in mm : 9.75

rack travel mm Tolerance mm	: +-	5.40 0.10
Del. quantity cm3/1000 strokes Tolerance	:	16.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

LOW IDLE

Rated speed rpm : 275

Rated speed rpm :

Tolerance 1/min : + 8

D01

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402648799

#### Injection pump

Pump designation : PE8P120A320LS7847-2

EP type number : 0412628885

#### Governor

Governer design. : RQ300/1050PA1030-28

Governer no. : 0421801778

Cust. part No. : 0260744102

Customer—spec. information Customer : MB-NFZ Motor : 0M442 LA Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0

x length nm : 1000

#### REMARKS

# (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 20.50Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 14.80

Tolerance mm : +- 0.05	+
	+ Rated speed rpm : 426
Del. quantity cm3/1000 strokes : 239.0	+ guide sleeve + travel mm : 4.29
Chia/ God Strokes : 237.0	+ Tolerance mm : +- 0.10
Tolerance	+
cm3/1000 strokes : +- 1.0	+ Rated speed rpm : 540
Check tolerance	+ guide sleeve + travel mm : 6.00
cm3/1000s. : +- 4.0	+ Tolerance mm : +- 0.10
	+
Spreed	+ Rated speed rpm : 1270
Tolerance cm3/1000 strokes : 6.0	+ guide sleeve + travel mm : 11.50
CIID/ 1000 Strokes : 0.0	+ Tolerance mm : + 0.50
Check tolerance	+
cm3/1000s. : 9.0	+ Rated speed rpm : 828
2nd speed rpm : 300	<pre>guide sleeve travel mm : 6.38</pre>
zia speed i pii . Soo	+ Tolerance nm : + 0.10
Rack travel in mm : 5.70	+
Tolerance mm : + 0.30	
Del. quantity cm3/1000 strokes : 13.0	GUIDE SLEEVE POSITION
Tolerance	T Rated speed rpm : 600
cm3/1000 strokes : +- 3.0	+
Check tolerance	+ Rack travel in mm : 7.00
cm3/1000s. : +- 6.0 Spreed	Tolerance mm : + 0.80
Tolerance	I
cm3/1000 strokes : 6.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	+
cm3/1000s. : 10.0	+ Rated speed rpm : 550 + Aneroid pressure
	+ hPa : 1200
(B) SETTING OF INJECTION PUMP	Del. quantity
WITH GOVERNOR	+ cm3/1000 strokes : 239.0
	+ Tolerance + cm3/1000 strokes : +- 1.0
GUIDE SLEEVE TRAVEL	Check tolerance
	cm3/1000s. : +- 4.0
Rated speed rpm : 300	Spreed
guide sleeve - travel mm : 1.94 -	+ Tolerance + cm3/1000 strokes : 6.0
Tolerance mm : +- 0.10	Check tolerance
•	cm3/1000s. : 9.0
Rated speed rpm : 1104	+
guide sleeve - travel mm : 6.84 -	RATED SPEED
Tolerance mm : + 0.10	HATE OF LED
	<del> </del>
Rated speed rpm : 1050 -	control lever position degree : 99.0
guide sleeve - travel mm : 6.50 -	<pre>position degree : 99.0 tolerance degree : +- 4.0</pre>
Tolerance mm : + 0.10 -	†
<del>.</del>	rack travel mm : 13.30
Rated speed rpm : 732 -	- Rated speed rpm : 1098 - Tolerance 1/min : +- 8
guide sleeve - travel mm : 6.13 -	Toterance minn : To
Tolerance mm : + 0.10	rack travel mm : 4.00

Rated speed rpm	: 1190	+ r	ack travel mm	
Tolerance 1/min	: +- 15	<u> </u>	olerance mm	
		1		
rack travel mm	: 0.75	. ↓ Ri	ated speed rpm	: 400
Tolerance mm		1 "	acca opoca (piii	. 100
Rated speed rpm	1350	1 0	ressure hPa	: 300
Nated Speed 1 pill	. (450	I	ack travel mm	: 12.55
		7 13	ack travet iiiii	12.33
LOUITNE		<del>-</del> † "	olerance mm	: +- 0.20
LOW IDLE		† 5		/50
		† P!	ressure nPa	: 450
		+ <u>r</u> a	ressure hPa ack travel mm olerance mm	: 13.85
control lever		+ 10	olerance mm	: +- 0.15
position degree	: 73.0	+		
tolerance degree	: <del></del> 4.0	+ -	<del></del>	
		+ s7	TART CUT-OUT	
Testing:		+		
		+ Ra	ated speed rpm	: > 100
Rated speed rpm	: 300		heck	
rack travel mm	: 5.50		peed 1/min	: > 80
rack travel mm Tolerance mm	· + 0.10	1 0	ated speed rpm	• > 220
, occ. airec mi	0.10		heck	•
mark though mm	: 2.00		peed 1/min	: > 240
rack travel mm Rated speed rpm Tolerance 1/min	: 415	T st	pecu i/miii	. / 240
Talanana 1/min	: +- 20	Ť		
Toterance T/min	: +- 20	† =	151 AEL TUEDV 011	
0-4-1	200	+ 1	JEL DELIVERY CHA	RACTERISTICS
Rated speed rpm	: 200	† .	• •	
			neroid pressure	
CRT mm min.	: > 7.20	+ hF		: 450
		+ Ra	ated speed rpm	: 400
		— + De	el. quantity	
TORQUE CONTROL		+ cn	m3/1000 strokes	: 198.0
			olerance	
Rated speed rpm	: 550		n3/1000 strokes	: +- 1.5
rack travel mm			neck tolerance	
Tolerance mm			n3/1000s.	• +- 45
. Ott. di loc limi		1 0	10000	• • • • • • • • • • • • • • • • • • • •
Rated speed rpm	• 1050	⊥ Δn	neroid pressure	
rack travel mm	: 14.30	+ hP		: 1200
rack travel mm Tolerance mm				
roterance mm	: <del>+-</del> 0.10		ated speed rpm	: 1050
~	050		el. quantity	047.0
Rated speed rpm			13/1000 strokes	: 217.0
rack travel mm	: 14.50		lerance	
Tolerance mm	: + 0.10		3/1000 strokes	: +- 2.0
			neck tolerance	
	· · · · · · · · · · · · · · · · · · ·		3/1000s.	: +- 5.0
ANEROID/ALTITUDE		+ Sp	preed	
COMPENSATOR TEST		→ To	lerance	
			3/1000 strokes	: 8.0
			eck tolerance	
SETTING			3/1000s.	: 12.0
32112113		1	107 100001	
Rated speed rpm	: 400	1 An	eroid pressure	
Pressure hPa	1200	∓ ĥP		•
				500
rack travel mm	: 14.80		ted speed rpm	: 500
Tolerance mm	: <del>←</del> 0.05		l. quantity	4/1 0
***			3/1000 strokes	: 144.0
MEASUREMENT			lerance	
			3/1000 strokes	: +- 1.0
Pressure hPa	: -		eck tolerance	
Rated speed rpm	: 400	+ cm	3/1 <b>000</b> s.	: +- 4.0
•		•		
004				

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

#### **BREAKAWAY**

Rack travel in mm : 13.30 Rated speed rpm : 1098 Tolerance 1/min : + 8

# STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : **←** 24.0

#### LOW IDLE

300 Rated speed rpm 5.70 rack travel mm : +- 0.30 Tolerance mm

Del. quantity cm3/1000 strokes : 13.0 Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : + 6.0 Spreed

Tolerance

6.0 cm3/1000 strokes : Check tolerance

cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.03.95 Edition Test oil : ISO 4113

Combination No. : 0402648943

Injection pump

Pump designation : PE8P120A720LS7189

: -10

: 0412628893 EP type number

Governor

Governer design. : RQV350...1050PA795

: -14

: 0421814020 Governer no.

Cust. part No. : 1340518

Customer-spec. information : SCANIA Customer Motor : DSC14

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : **←** 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1688901104

Opening pressure

251.5 bar Tolerance bar : +- 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : +- 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-2-7-3-4 : - 5- 6- 8

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : **←** 0.30

Check

tolerance °NW : **←** 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.25 Tolerance mm :  $\leftarrow$  0.05

Del. quantity	1	Spreed	
cm3/1000 strokes	• 216.0	Tolerance	
CIID, 1000 OCTORES	I	cm3/1000 strokes : 8.0	
Tolerance		Check tolerance	
cm3/1000 strokes	· <u> </u>		
Ciliby 1000 Strokes	: + 1.0 +	cm3/1000s. : 12.0	
Charle dellares			
Check tolerance			
cm3/1000s.	: <b>←</b> 4.0 +	RATED SPEED	
	+		
Spreed	+		
Tolerance	+	control lever	
cm3/1000 strokes	: 8.0	position degree : 46.0	
	<u> </u>		
Check tolerance	+	control lever	
cm3/1000s.	: 12.0	position degree : 106.0	
	1	tolerance degree : + 4.0	
2nd speed rpm	: 350		
	1	rack travel mm : 11.20	
Rack travel in mm	: 4.60	Rated speed rpm : 1095	
Tolerance mm	: + 0.30	Tolerance 1/min : +- 5	
Del. quantity	T	rocerance man	
cm3/1000 strokes	: 21.0 I	rack travel mm : 4.00	
Tolerance	· 21.0		
	T	Rated speed rpm : 1195	
cm3/1000 strokes	: +- 3.0 †	Tolerance 1/min : +- 15	
Check tolerance	†		
cm3/1000s.	: + 6.0 +	rack travel mm : 0.50	
Spreed	+	Tolerance mm : + 7.50	
Tolerance	+	Rated speed rpm : 1350	
cm3/1000 strokes	: 4.0 +		
Check tolerance	+		
cm3/1000s.	: 8.0	LOW IDLE	
	+		
	<del> </del>		
(B) SETTING OF IN	JECTION PUMP 1	control lever	
WITH GOVERNOR	1	position degree : 74.0	
W2111 00121111011	1	tolerance degree : +- 4.0	
	1	toterance degree 4.0	
		control lever	
GUIDE SLEEVE POSIT	TTON	position degree : 15.0	
GOIDE SEELVE FOST	T	position degree . 15.0	
	†	Tooting	
aantmat lauren	†	Testing:	
control lever	†	Data dama da a a a a a a a a a a a a a a a	
position degree		Rated speed rpm : 350	
Rated speed rpm	: 1750 +	rack travel mm : 4.60	
	+	Tolerance mm : ← 0.10	
Rack travel in mm			
Tolerance mm	: +- 1.30 +	Rated speed rpm : 250	
	+		
		CRT mm min. :> 7.50	
FULL LOAD DELIVERY	Y AT FULL LOAD STOP +		
	1		
Rated speed rpm	: 700	CONTINUOUS-ACTION CONTROL	
Aneroid pressure	1		
hPa	: - +	Rated speed rpm : 325	
Del. quantity	·	nated opena i piii . Old	
cm3/1000 strokes	: 216.0 I		
	. 210.0	TOPOLIE CONTROL	
Tolerance	10	TORQUE CONTROL	
cm3/1000 strokes	: <b>←</b> 1.0 <b>†</b>	Date dament was 700	
Check tolerance	†	Rated speed rpm : 700	
Am7/10000			
cm3/1000s.	: +- 4 <sub>0</sub> +	rack travel mm : 12.25	

Tolerance mm : +- 0.05 Rated speed rpm 1050 rack travel mm 12.25 Tolerance mm : +- 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 1500 Pressure hPa : 12.25 rack travel mm Tolerance mm : + 0.05**MEASUREMENT** Pressure hPa Rated speed rpm 500 rack travel mm 10.00 Tolerance mm : + 0.20Rated speed rpm 500 Pressure hPa 525 rack travel mm 11.75 Tolerance mm : + 0.05Pressure hPa 320 : rack travel mm 10.50 Tolerance mm : + 0.20FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 1050 Rated speed rpm Del. quantity cm3/1000 strokes : 199.0 Tolerance cm3/1000 strokes : +-4.0 Check tolerance cm3/1000s. 6.0 Aneroid pressure hPa Rated speed rpm 500 Del. quantity cm3/1000 strokes : 144.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance

4.0

#### BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 160.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 24.0

#### LOW IDLE

Rated speed rpm 350 rack travel mm 4.60 Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 21.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s.8.0

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.03.95 Edition Test oil : ISO 4113

Combination No. : 0402648947B

### Injection pump

Pump designation : PE8P12OA320LS7859

EP type number : 0412628869

Governor

Governer design. : RQ300/950PA1032-5

Governer no. : 0421801668

Cust. part No. : 0230749602

Customer-spec. information Customer : MB-NFZ : 0M442 LA Motor Power KW : 320.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

: 208.5 bar : **←** 1.5 Tolerance bar

Lube oil : 1409918004 Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

#### REMARKS

# (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : + 0.30

Check

tolerance "NW : + 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 15.00 - Tolerance mm: +- 0.05 -	guide sleeve travel mm : 4.76 Tolerance mm : +- 0.10
Del. quantity cm3/1000 strokes : 254.0	Rated speed rpm : 580 guide sleeve travel mm : 6.00
Tolerance - cm3/1000 strokes : +- 1.0 -	Tolerance mm : + 0.10  Rated speed rpm : 1190
Check tolerance cm3/1000s. : + 4.0	guide sleeve travel mm : 11.50 Tolerance mm : + 0.50
Spreed Tolerance cm3/1000 strokes : 6.0	GUIDE SLEEVE POSITION
	GOIDE SEELVE 1 OST 11014
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 600
2nd speed rpm : 300	Rack travel in mm : 20.00 Tolerance mm : + 0.80
Rack travel in mm: 5.20 - Tolerance mm: + 0.30 -	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity - cm3/1000 strokes : 19.0 - Tolerance -	r - Rated speed rpm : 550 - Aneroid pressure
cm3/1000 strokes : + 3.0 - Check tolerance	- hPa : 1000 - Del. quantity
cm3/1000s. : +- 6.0 Spreed	- cm3/1000 strokes : 254.0 - Tolerance
Tolerance - cm3/1000 strokes : 6.0	- cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : 10.0	- cm3/1000s. : +- 4.0 - Spreed
+	- Tolerance - cm3/1000 strokes : 6.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- Check tolerance - cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	- RATED SPEED
Patral aread may 200	-
Rated speed rpm : 300 guide sleeve	- - control lever
travel mm : 1.72	- position degree : 97.0
Tolerance mm : +- 0.10 +	- tolerance degree : +- 4.0 -
Rated speed rpm : 1005 + guide sleeve +	- rack travel mm : 14.00 - Rated speed rpm : 998
travel mm : 6.34	- Tolerance 1/min : + 8
Tolerance mm : $\leftarrow$ 0.10	· rack travel mm : 4.00
Rated speed rpm : 950	- Rated speed rpm : 1090
guide sleeve + travel mm : 6.00 +	- Tolerance 1/min : +- 15
Tolerance mm : + 0.10	rack travel mm : 0.75
Rated speed rpm : 476	Tolerance mm : +- 0.75 Rated speed rpm : 1200
т	

LOW IDLE	
control lever position degree tolerance degree	: 74.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.20 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 435 : + 20
Rated speed rpm	: 200
CRT mm min.	: > 8.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 550 : 15.00 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 15.00 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : 1000 : 15.00 : +- 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 400 : 9.10 : + 0.15
Rated speed rpm	: 400
Pressure hPa rack travel mm Tolerance mm	: 250 : 11.00 : + 0.10
Pressure hPa	: 550

rack travel mm Tolerance mm	: 13.60 : + 0.15
START CUT-OUT	
Rated speed rpm Check	: > 100
speed 1/min Rated speed rpm	: > 80 ; > 220
Check speed 1/min	: > 240
FUEL DELIVERY CHA	NRACTERISTICS
Aneroid pressure	
hPa	: 550
Rated speed rpm	: 400
Del. quantity cm3/1000 strokes	: 205.0
Tolerance	: +- 1.5
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s.	<b>:</b> ← 4.5
Aneroid pressure	
hPa	: 1000 : 950
Rated speed rpm Del. quantity	: 950
cm3/1000 strokes	: 241.0
Tolerance cm3/1000 strokes	. + 20
Check tolerance	: + 2.0
cm3/1000s.	: <del>+</del> 5.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0
Aneroid pressure	
hPa Rated speed rpm	: - : 500
Del. quantity	
cm3/1000 strokes	: 135.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S. Spreed	: +- 4.0
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
BREAKAWAY	

Rack travel in mm : 14.00 Rated speed rpm : Tolerance 1/min

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 235.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : + 24.0

# LOW IDLE

Rated speed rpm 300 rack travel mm 5.20 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.03.95 Edition Test oil : ISO 4113

Combination No. : 0402648980

# Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0412628855

Governor

Governer design. : RQV300...950PA797

: -39

Governer no. : 0421814115

Cust. part No. : 0250749102

Customer-spec. information Customer : MB-NFZ Motor : 0M442 LA Power KW : 370.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5 Tolerance bar : +-0.1

Tolerance l/h: +- 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 Tolerance bar : + 1.5

Lube oil : 1409918004 Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm: 14.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 : +- 0.30 Tolerance

Check

tolerance  $^{\circ}NW$  : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

Rated speed rpm : 550

		1 • 1 1
David Analysis day as	45.00	guide sleeve
Rack travel in m		+ travel mm : 5.23
Tolerance mm	: <del>+-</del> 0.05	Tolerance mm : + 0.25
Dol guantity		Doted mond mm . 700
Del. quantity cm3/1000 strokes	: 289.0	Rated speed rpm : 780
Cm3/1000 Strokes	: 209.0	+ guide sleeve
Talanamaa		+ travel mm : 6.31
Tolerance		+ Tolerance mm : +- 0.25
cm3/1000 strokes	: <b>←</b> 1.0	T Detail and June 4000
Charle dalamena		Rated speed rpm : 1092
Check tolerance	: +- 4.0	+ guide steeve
cm3/1000s.	: + 4.0	travel mm : 10.00
Spaced 2		+ Tolerance mm : +- 0.25
Spreed Tolerance		T Dated around rum . 1100
cm3/1000 strokes	: 6.0	Rated speed rpm : 1190
Chis/ 1000 Strokes	: 0.0	+ guide sleeve
Check tolerance		travel mm : 11.50
cm3/1000s.	: 9.0	† Tolerance mm : + 0.50
CMS/ 10005.	: 9.0	<b>T</b>
Ind anood non	200	CUIDE CLEENE DOCUTION
2nd speed rpm	: 300	+ GUIDE SLEEVE POSITION
Rack travel in mm	5.20	Ť
	: + 0.30	t control lever
Tolerance mm	: 0.30	
Del. quantity cm3/1000 strokes	: 19.0	+ position degree : - 1
Tolerance	: 19.0	+ Rated speed rpm : 1030
	: + 3.0	T Book travel in man a 1/ 20
cm3/1000 strokes Check tolerance	: — 3.0	+ Rack travel in mm : 14.20
	: <del>+</del> 6.0	+ Tolerance mm : + 1.30
cm3/1000s.	: <del>+</del> 6.0	†
Spreed Tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
lolerance		FBIT TUAD DELIVERY AT FIICT TOAY STOP
	. 40	TOLL COMP PELIFICIAL MI TOLL COMS OFF
cm3/1000 strokes	: 6.0	+
cm3/1000 strokes Check tolerance		Rated speed rpm : 550
cm3/1000 strokes	: 6.0 : 10.0	Rated speed rpm : 550 Aneroid pressure
cm3/1000 strokes Check tolerance		Rated speed rpm : 550 Aneroid pressure hPa : 1200
cm3/1000 strokes Check tolerance cm3/1000s.	: 10.0	Rated speed rpm : 550 Aneroid pressure hPa : 1200 Del. quantity
cm3/1000 strokes Check tolerance cm3/1000S.	: 10.0	Rated speed rpm : 550 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0
cm3/1000 strokes Check tolerance cm3/1000s.	: 10.0	Rated speed rpm : 550 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance
cm3/1000 strokes Check tolerance cm3/1000S.	: 10.0	Rated speed rpm : 550 Aneroid pressure HPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR	: 10.0 JECTION PUMP	Rated speed rpm : 550 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000S.	: 10.0 JECTION PUMP	Rated speed rpm : 550 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV	: 10.0  JECTION PUMP  EL	Rated speed rpm : 550  Aneroid pressure  hPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm	: 10.0 JECTION PUMP	Rated speed rpm : 550  Aneroid pressure  hPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve	: 10.0  JECTION PUMP  EL  : 300	Rated speed rpm : 550  Aneroid pressure  hPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0
cm3/1000 strokes Check tolerance cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29	Rated speed rpm : 550  Aneroid pressure  HPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0  Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve	: 10.0  JECTION PUMP  EL  : 300	Rated speed rpm : 550  Aneroid pressure  hPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20	Rated speed rpm : 550  Aneroid pressure  HPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0  Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	: 10.0  JECTION PUMP  EL  : 300  : 1.29	Rated speed rpm : 550  Aneroid pressure  hPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0  Check tolerance  cm3/1000 strokes : 9.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20 : 1010	Rated speed rpm : 550  Aneroid pressure  HPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0  Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20  : 1010  : 8.56	Rated speed rpm : 550  Aneroid pressure  hPa : 1200  Del. quantity  cm3/1000 strokes : 289.0  Tolerance  cm3/1000strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0  Check tolerance  cm3/1000 strokes : 9.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20 : 1010	Rated speed rpm : 550  Aneroid pressure hPa : 1200  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000s strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20  : 1010  : 8.56 : + 0.15	Rated speed rpm : 550  Aneroid pressure hPa : 1200  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20  : 1010  : 8.56	Rated speed rpm : 550  Aneroid pressure hPa : 1200  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 121.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29  : + 0.20  : 1010  : 8.56  : + 0.15  : 567	Rated speed rpm : 550  Aneroid pressure hPa : 1200  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29  : + 0.20  : 1010  : 8.56  : + 0.15  : 567  : 4.66	Rated speed rpm : 550  Aneroid pressure hPa : 1200  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 121.0 tolerance degree : + 4.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29  : + 0.20  : 1010  : 8.56  : + 0.15  : 567	Rated speed rpm : 550  Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED   control lever position degree : 121.0 tolerance degree : +- 4.0  rack travel mm : 14.20
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29 : + 0.20  : 1010  : 8.56 : + 0.15  : 567  : 4.66 : + 0.25	Rated speed rpm : 550  Aneroid pressure hPa : 1200  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000s: + 1.0  Check tolerance cm3/1000s. : + 4.0  Spreed  Tolerance cm3/1000 strokes : 6.0  Check tolerance cm3/1000s. : 9.0  RATED SPEED   control lever position degree : 121.0 tolerance degree : + 4.0  rack travel mm : 14.20 Rated speed rpm : 995
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 10.0  JECTION PUMP  EL  : 300  : 1.29  : + 0.20  : 1010  : 8.56  : + 0.15  : 567  : 4.66	Rated speed rpm : 550  Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED   control lever position degree : 121.0 tolerance degree : +- 4.0  rack travel mm : 14.20

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm	: 1095 : + 15 : 0.75 : + 0.75	Pressure hPa : - Rated speed rpm : 400 rack travel mm : 8.25 Tolerance mm : + 0.15 Rated speed rpm : 400 Pressure hPa : 300
LOW IDLE		- rack travel mm : 9.95 - Tolerance mm : +- 0.20 -
control lever position degree tolerance degree	: 82.0 : + 4.0	Pressure hPa : 500 rack travel mm : 11.65 Tolerance mm : +- 0.20
Testing:	$\frac{1}{1}$	START CUT-OUT
Rated speed rpm rack travel mm Tolerance mm	: 5.20 : + 0.10	Rated speed rpm : > 190 Check speed 1/min : > 170 Rated speed rpm : < 220
Rated speed rpm CRT mm min.	+	Check speed 1/min : < 240
CONTINUOUS-ACTION	N CONTROL	FUEL DELIVERY CHARACTER TICS
Rated speed rpm	<del>}</del>	Aneroid pressure hPa : 500 Rated speed rpm : 400
TORQUE CONTROL	+	Del. quantity cm3/1000 strokes : 196.0 Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 15.20 <del> </del>	cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5
Rated speed rpm rack travel mm Tolerance mm	: 15.20 +	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity
Rated speed rpm rack travel mm	: 950 : 15.20	cm3/1000 strokes : 274.5 Tolerance
Tolerance mm	: + 0.10	cm3/1000 strokes : +- 3.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST	<del></del>	cm3/1000S. : +- 6.0  Aneroid pressure hPa : 1200
SETTING	‡	Rated speed rpm : 950 Del. quantity
Rated speed rpm	: 400	cm3/1000 strokes : 271.0 Tolerance
Pressure hPa rack travel mm Tolerance mm	: 1200 + : 15.20 + : + 0.05 +	cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000S. : +- 6.0
MEASUREMENT		Aneroid pressure hPa : -

Rated speed rpm 500 Del. quantity cm3/1000 strokes : 136.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes 8.0 Check tolerance cm3/1000s. 12.0 **BREAKAWAY** Rack travel in mm : 14.20 Rated speed rpm : Tolerance 1/min STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 255.0 Tolerance cm3/1000 strokes : + 20.0Check tolerance cm3/1000s. : +- 24.0 LOW IDLE Rated speed rpm 300 5.20 rack travel mm Tolerance mm : +- 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance 10.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.03.95 Test oil : ISO 4113

Combination No. : 0402648981

# Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0412628855

Governor

Governer design. : RQ300/950PA971-10

Governer no. : 0421801754

Cust. part No. : 0250749002

Customer—spec. information Customer : MB-NFZ Motor : 0M442 LA Power KW : 370.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: + 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

-

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 15.20

Tolerance mm : +- 0.0	5 +		
	+	Rated speed rpm	: 580
Del. quantity cm3/1000 strokes : 289.	, †	guide sleeve	
Cinstituto strokes : 209.	·	travel mm Tolerance mm	: 6.00 : +- 0.10
Tolerance	+	TOCCI GITCC IMIT	0.10
cm3/1000 strokes : $+-$ 1.	0 +	Rated speed rpm	: 1190
Check tolerance		guide sleeve	. 44 50
cm $3/1000$ s. : +- 4.	o I	travel mm Tolerance mm	: 11.50 : +- 0.50
	<del> </del>	TOCC. GITOC TIME	0.50
Spreed	+	0.175	
Tolerance cm3/1000 strokes : 6.0	n İ	GUIDE SLEEVE POSIT	ION
	<u> </u>	Rated speed rpm	: 600
Check tolerance	+		
cm3/1000s. : 9.0	U †	Rack travel in mm Tolerance mm	: 20.00 : +- 0.80
2nd speed rpm : 300	I	roterance imi	0.00
	_ +		<del></del>
Rack travel in mm: 5.20 Tolerance mm: + 0.30		FULL LOAD DELIVERY	AT FULL LOAD STOP
Del. quantity	<b>'</b>	Rated speed rpm	: 550
cm3/1000 strokes : 19.0	D 🗼	Aneroid pressure	. 550
Tolerance	_ +	hPa	: 1200
cm3/1000 strokes : +- 3.0 Check tolerance	1	Del. quantity cm3/1000 strokes	: `9.0
cm3/1000s. : +- 6.0	o I	Tolerance	. 7.0
Spreed	+	cm3/1000 strokes	: <del>+</del> 1.0
Tolerance	+	Check tolerance	
cm3/1000 strokes : 6.0 Check tolerance	1	cm3/1000s. Spreed	: +- 4.0
cm3/1000s. : 10.0	<b>.</b> ↓	Tolerance	
	+	cm3/1000 strokes	: 6.0
(D) SETTING OF THIEGTION DUR	40	Check tolerance	. 00
(B) SETTING OF INJECTION PUN WITH GOVERNOR	<b>"</b>	cm3/1000s.	: 9.0
W2777 GOTEMION	+		
		RATED SPEED	
GUIDE SLEEVE TRAVEL	İ		
Rated speed rpm : 300	+	control lever	
guide sleeve	_ +	position degree	: 102.0
travel mm : 2.25 Tolerance mm : + 0.10		tolerance degree	: +- 4.0
Toterance min . += 0.10	Ţ	rack travel mm	: 14.20
Rated speed rpm : 1005	+	Rated speed rpm	: 998
guide sleeve	, †	Tolerance 1/min	<b>:</b> +- 5
travel mm : 6.33 Tolerance mm : + 0.10		rack travel mm	: 4.00
Total ance many	<b>'</b>	Rated speed rpm	: 1105
Rated speed rpm : 950	+	Tolerance 1/min	: <del>+-</del> 15
guide sleeve travel mm : 6.00	, †	nack traval mm	. 0.75
travel mm : 6.00 Tolerance mm : + 0.10		rack travel mm Tolerance mm	: 0.75 : +- 0.75
	+		1250
Rated speed rpm : 450	†	-	
guide sleeve travel mm : 4.72	. 1	LOW IDLE	
Tolerance mm : + 0.10		WITH AVEL	
	•		

control lever position degree tolerance degree	: 76.0 : + 4.0	rack travel mm Tolerance mm	
Testing:		START CUT-OUT	
Rated speed rpm	: 300	Rated speed rpm Check	: > 100
rack travel mm Tolerance mm	: 5.20	speed 1/min	: > 80
Tolerance mm	: + 0.10	+ Rated speed rpm + Check	: < 220
rack travel mm	: 2.00	speed 1/min	: < 240
rack travel mm Rated speed rpm Tolerance 1/min	: 425	+	2.0
Tolerance 1/min	: <del></del> 20	+	
Datad anacd mm	. 200	+ FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm	: 200	Aneroid pressure	
CRT mm min.	: > 7.20	+ hPa	: 500
		Rated speed rpm	
		+ Del. quantity	
TORQUE CONTROL		+ cm3/1000 strokes	: 196.0
Rated speed rpm	. 550	+ Tolerance + cm3/1000 strokes	15
rack travel mm	: 15.20	Check tolerance	
Tolerance mm	: +- 0.05	+ cm3/1000s.	
		+	
Rated speed rpm rack travel mm Tolerance mm	: 750	+ Aneroid pressure	
rack travel mm	: 15.20	+ hPa	: 1200
roterance mm	: +- 0.05	Rated speed rpm Del. quantity	: 750
Rated speed rpm	: 950	+ cm3/1000 strokes	: 274.5
rack travel mm	: 15.20	+ Tolerance	. [1-4.2
Tolerance mm	: + 0.10	+ cm3/1000 strokes	: +- 3.0
		+ Check tolerance	
ANEROID/ALTITUDE		- cm3/1000s.	: +- 6.0
COMPENSATOR TEST		Aneroid pressure	
		+ hPa	: 1200
		+ Rated speed rpm	
SETTING		+ Del. quantity	
Rated speed rpm	: 400	+ cm3/1000 strokes + Tolerance	: 271.0
Pressure hPa	: 1200	cm3/1000 strokes	: +- 3.0
rack travel mm	: 15.20	+ Check tolerance	
Tolerance mm	: ← 0.05	+ cm3/1000s.	: <b>←</b> 6.0
MEASUREMENT		+ Aneroid pressure	
TIEAUQNEITEITT		+ hPa	: -
Pressure hPa	: -	+ Rated speed rpm	: 500
Rated speed rpm	: 400	+ Del. quantity	
rack travel mm	8.25	+ cm3/1000 strokes	: 136.0
Tolerance mm	: +- 0.15	+ Tolerance + cm3/1000 strokes	: +- 1.0
Rated speed rpm	: 400	Check tolerance	. ~ 1.0
Hara opeca (pill	. , , , , , , , , , , , , , , , , , , ,	- cm3/1000s.	: + 4.0
Pressure hPa	: 300	Spreed	· - <del>-</del>
rack travel mm	: 9.95	+ Tolerance	
Tolerance mm	: + 0.20	cm3/1000 strokes	: 8.0
Pressure hPa	: 500	+ Check tolerance + cm3/1000s.	: 12.0
i ressure iira	. 500	1. CHD/ 100001	. 12.0

#### **BREAKAWAY**

Rack travel in mm: 14.20 Rated speed rpm: 998 Tolerance 1/min: +- 5

# STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 255.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 24.0

#### LOW IDLE

cm3/1000s.

Rated speed rpm 300 rack travel mm 5.20 Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance

10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 17.03.95 Test oil : ISO 4113

Combination No. : 0402648982

Injection pump

Pump designation : PE8P120A320LS7884

EP type number : 0412628900

Governor

Governer design. : RQV350...1200PA1197

Governer no. : 0421814116

Cust. part No. : 0250744102

Customer-spec. information : MTU Customer

Motor

: 8V-183-03

Power KW

: 564.0

TEST BENCH REQUIREMENTS

# Test oil inlet

temp. °C

Tolerance °C

: 40 : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Tolerance l/h: + 10.0

Test nozzle holde

assembly

: 1688901105

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Lube oil

: 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter:

3.0

x Length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : '.05
Tolerance mm : ← 0.05

test only : + 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 :-5-4-1

: 0-45-90-135-180 Phasing : -225-270-315

: +- 0.30 Tolerance

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 9.50

Tolerance mm : +- 0.05

No.1 minutities	+ Rated speed rpm : 457
Del. quantity cm3/1000 strokes : 260.5	+ guide sleeve
cm3/1000 strokes : 260.5	travel mm : 3.13
Tolerance	† Tolerance mm : +- 0.25
cm3/1000 strokes : +- 1.0	Rated speed rpm : 610
CIID/ 1000 Strokes . 4- 1.0	+ Rated speed rpm : 610 + guide sleeve
Check tolerance	travel mm : 3.65
cm3/1000s. : +- 4.0	Tolerance mm : + 0.25
CIID/10000; 4.0	I roter differ in . 4- 0.25
Spreed	Rated speed rpm : 1360
Tolerance	guide sleeve
cm3/1000 strokes : 8.0	+ travel mm : 10.00
	+ Tolerance mm : + 0.25
Check tolerance	+
cm3/1000s. : 12.0	+ Rated speed rpm : 1470
	+ guide sleeve
2nd speed rpm : 350	+ travel mm : 11.50
	+ Tolerance mm : + 0.50
Rack travel in mm : 3.80	+
Tolerance mm : + 0.30	
Del. quantity	+ GUIDE SLEEVE POSITION
cm3/1000 strokes : 15.0	†
Tolerance	†
cm3/1000 strokes : + 3.0	+ control lever
Check tolerance	position degree : - 1
cm3/1000s. : + 6.0	+ Rated speed rpm : 173
Spreed Tolerance	+ Rack travel in mm : 13.00
cm3/1000 strokes : 8.0	+ Rack travel in mm : 13.00 + Tolerance mm : +- 1.30
Check tolerance	Toterance in : + 1.50
cm3/1000s. : 12.0	
. 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP
	TOLE COAD DELIVERY AT TOLE COAD STOP
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 600
WITH GOVERNOR	+ Aneroid pressure
	+ hPa : 650
	Del. quantity
GUIDE SLEEVE TRAVEL	+ cm3/1000 strokes : 260.5
	+ Tolerance
Rated speed rpm : 350	+ cm3/1000 strokes : +- 1.0
guide sleeve	+ Check tolerance
travel mm : 1.53	+ cm3/1000s. : $+$ 4.0
Tolerance mm : + 0.20	+ Spreed
	+ Tolerance
Rated speed rpm : 1255	+ cm3/1000 strokes : 8.0
guide sleeve	+ Check tolerance
travel mm : 8.31	+ cm3/1000s. : 12.0
Tolerance mm : + 0.15	<b>†</b>
Rated speed rpm : 1000	DATED COCED
Rated speed rpm : 1000 guide sleeve	RATED SPEED
travel mm : 5.83	I
Tolerance mm : +- 0.25	T control lever
TOTAL STATE OF CO.	position degree : 120.0
Rated speed rpm : 407	tolerance degree : + 4.0
guide sleeve	+ Cotor and degree 1 . The
travel mm : 2.57	+ rack travel mm : 12.70
Tolerance mm : + 0.25	Rated speed rpm : 1245
	+ Tolerance 1/min : + 5

rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1345 : ← 15	+ Pressure hPa : 500 + rack travel mm : 9.00 + Tolerance mm : +- 0.05
		Pressure hPa : 250
rack travel mm		rack travel mm : 7.30 Tolerance mm : +- 0.10
Tolerance mm	: + U.5U	† Tolerance mm : +- U.10
Rated speed rpm	: 1430	T Proscure hPa · 1600
		Pressure hPa : 1600
LOW IDLE		+ Tolerance mm : +- 0.05
		+
		+ Pressure hPa : 1000
control lever		rack travel mm : 10.55 Tolerance mm : +- 0.10
position degree	: 64.0	† Tolerance mm : +- 0.10
tolerance degree	: <del>←</del> 4.0	†
Testing:		START CUT-OUT
Rated speed rpm	: 350	Rated speed rpm :> 260
rack travel mm	: 3.80	+ Check
rack travel mm Tolerance mm	: ← 0.10	+ speed 1/min : > 240
		+ Rated speed rpm : < 270
Rated speed rpm	: 250	+ Check
CDTi-	. > 5.70	+ speed 1/min : < 290
CRT mm min.	: > 5.50	Ī
CONTINUOUS-ACTION	N CONTROL	+
		+ Aneroid pressure
Rated speed rpm	: 450	+ hPa : 2000
		+ Rated speed rpm : 1200
TODOLIC CONTROL		+ Del. quantity
TORQUE CONTROL		cm3/1000 strokes : 334.0 Tolerance
Rated speed rpm	• 600	+ cm3/1900 strokes : + 1.5
rack travel mm	9.50	Check tolerance
rack travel mm Tolerance mm	: +- 0.05	+ cm3/1000s. : + 4.5
		+ Spreed
Rated speed rpm		† Tolerance
rack travel mm	: 13.75	+ cm3/1000 strokes : 10.0
Tolerance mm	: + 0.10	+ Check tolerance
Dated speed nom	: 750	+ cm3/1000s. : 14.0
Rated speed rpm rack travel mm		Aneroid pressure
Tolerance mm	: +- 0.10	hPa : 2000
		+ Rated speed rpm : 750
	<del></del>	+ Del. quantity
ANEROID/ALTITUDE		+ cm3/1000 strokes : 389.5
COMPENSATOR TEST		+ Tolerance
		$+$ cm3/1000 strokes : $\leftarrow$ 4.0
		+ Check tolerance + cm3/1000s. :+- 7.0
MEASUREMENT		
i ishvells isiti		Aneroid pressure
Pressure hPa	: -	+ hPa : -
Rated speed rpm		+ Rated speed rpm : 500
rack travel mm		Del. quantity
Tolerance mm	: +- 0.15	+ cm3/1000 strokes : 127.0
		+

Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. : +-4.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000s. 12.0 BREAKAWAY Rack travel in mm: 12.70 Rated speed rpm : 1245 Tolerance 1/min : + STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 415.0 Tolerance cm3/1000 strokes : + 20.0Check tolerance cm3/1000s. : +- 24.0 LOW IDLE 350 Rated speed rpm 3.80 rack travel mm Tolerance mm : +- 0.30 Del. quantity 15.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s.6.0 : +-Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.03.95 Edition : ISO 4113 Test oil

Combination No. : 0402648983

# Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0412628855

Governor

Governer design. : RQ300/950PA993-9

: 0421801755 Governer no.

Cust. part No. : 0250749202

Customer-spec. information : MB-NFZ Customer Motor : 0M442 LA Power KW : 370.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C 2.0

: 1417413047 Overflow valve

1.5 Inlet press. bar : Tolerance bar 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

208.5 Tolerance bar : + 1.5

: 1409918004 Lube oil

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0 : 1000 x length mm

REMARKS

# (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar 1.0

Prestroke mm 5.05 : +- 0.05 Tolerance mm

test only : + 0.10

Rack travel in mm: 14.50 : +- 0.50 Tolerance mm

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 : + 0.30

Check

Tolerance

tolerance °NW : + 0.75

# BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

Rated speed rpm 550

Rack travel in mm: 15.20

Tolerance mm : +- 0.05 +	
Del. quantity	Rated speed rpm : 500 guide sleeve
cm3/1000 strokes : 289.0	travel mm : 6.00 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1170 guide sleeve
Check tolerance cm3/1000s. : +- 4.0	travel mm : 11.50 Tolerance mm : + 0.50
Spreed Tolerance	CUTAE OF ENTE POOTTYON
cm3/1000 strokes : 6.0	GUIDE SLEEVE POSITION  Rated speed rpm : 600
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 20.00
2nd speed rpm : 300	Tolerance mm : +- 0.80
Rack travel in mm: 5.20	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.30 + Del. quantity	Rated speed rpm : 550
cm3/1000 strokes : 19.0 +	Aneroid pressure hPa : 1200
cm3/1000 strokes : +- 3.0 +-	Del. quantity cm3/1000 strokes : ~9.0
cm3/1000s. : +- 6.0 +- 5preed	Tolerance cm3/1000 strokes : +- 1.0
Tolerance	Check tolerance
Check tolerance	cm3/1000s. : + 4.0 Spreed
cm3/1000s. : 10.0 +	Tolerance cm3/1000 strokes : 6.0
(B) SETTING OF INJECTION PUMP	Check tolerance cm3/1000s. : 9.0
WITH GOVERNOR	
GUIDE SLEEVE TRAVEL	RATED SPEED
+	
Rated speed rpm : 300 + guide sleeve +	control lever position degree : 98.0
travel mm : 2.14 +	tolerance degree : +- 4.0
Tolerance mm : + 0.10	rack travel mm : 14.20
Rated speed rpm : 1005	Rated speed rpm : 998
guide sleeve	Tolerance 1/min : +- 5
travel mm : 6.34 + Tolerance mm : + 0.10 +	rack travel mm : 4.00
+	Rated speed rpm : 1085
Rated speed rpm : 950 + guide sleeve +	Tolerance 1/min : + 15
travel mm : 6.00 +	rack travel mm : 0.75
Tolerance mm : + 0.10	Tolerance mm : + 0.75 Rated speed rpm : 1250
Rated speed rpm : 399 guide sleeve	
travel mm : 4.46 +	LOW IDLE
Tolerance mm : +- 0.10 +	

control lever position degree tolerance degree	: 71.0	rack travel mm Tolerance mm	: 11.65 : + 0.20
	; + 4.0	START CUT-OUT	
Testing:		Rated speed rpm	: > 100
Rated speed rpm	: 300	+ Check	
rack travel mm Tolerance mm	: 3.5U · +- 0.10	+ speed 1/min + Rated speed rpm	:> 80 · < 220
		+ Check	
rack travel mm Rated speed rpm	: 2.00	speed 1/min	: < 240
Rated speed rpm Tolerance 1/min	: 340 : +- 20	<u> </u>	
TOTE GIVE TANKIT	. , 20	FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm	: 200	+	
CRT mm min.	•> 5.70	+ Aneroid pressure + hPa	: 500
VICE HAID INVEST.	3.10	Rated speed rpm	: 400
	**************************************	+ Del. quantity	
TORQUE CONTROL		+ cm3/1000 strokes	: 196.0
Rated speed rpm	: 550	+ Tolerance + cm3/1000 strokes	: +- 1.5
rack travel mm	: 15.20	+ Check tolerance	
Tolerance mm	: <del>+-</del> 0.05	+ cm3/1000s.	: <b>←</b> 4.5
Rated speed rpm	: 750	Aneroid pressure	
Rated speed rpm rack travel mm Tolerance mm	: 15.20	hPa Rated speed rpm	: 1200
Tolerance mm	: +- 0.05	+ Rated speed rpm + Del. quantity	: 750
Rated speed rpm	: 950	+ cm3/1000 strokes	: 274.5
rack travel mm	: 15.20	+ Tolerance	
Tolerance mm	: +- 0.10	+ cm3/1000 strokes	: <del>←</del> 3.0
		+ Check tolerance + cm3/1000s.	: +- 6.0
ANEROID/ALTITUDE		+	
COMPENSATOR TEST		+ Aneroid pressure + hPa	: 1200
		Rated speed rpm	
SETTING		+ Del. quantity	
Data dan sadan men		+ cm3/1000 strokes	: 271.0
Rated speed rpm Pressure hPa		+ Tolerance + cm3/1000 strokes	• + 3 0
rack travel mm	: 15.20	+ Check tolerance	3.3
Tolerance mm	: <del>+-</del> 0.05	+ cm3/1000s.	: <del>+</del> 6.0
MEASUREMENT		Aneroid pressure	
		+ hPa	: -
Pressure hPa Rated speed rpm	: - : 400	+ Rated speed rpm + Del. quantity	: 500
		+ cm3/1000 strokes	: 136.0
rack travel mm Tolerance mm	: <del>+-</del> 0.15	+ Tolerance	
Dated speed nom	: 400	+ cm3/1000 strokes + Check tolerance	: + 1.0
Rated speed rpm	: 400	+ cm3/1000s.	: +- 4.0
Pressure hPa	: 300	Spreed	
rack travel mm	: 9.95 : +- 0.20	+ Tolerance + cm3/1000 strokes	: 8.0
Tolerance mm	. +- 0.40	Check tolerance	. 0.0
Pressure hPa	: 500	+ cm3/1000s.	: 12.0

## BREAKAWAY

Rack travel in mm : 14.20 Rated speed rpm Tolerance 1/min

## STARTING FUEL DELIVERY

Rated speed rpm 100 Del. quantity cm3/1000 strokes :

255.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s.: **←** 24.0

## LOW IDLE

cm3/1000s.

Rated speed rpm 300 5.20 rack travel mm 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance

10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 16.03.95 : ISO 4113

Combination No. : 0402648984

Injection pump

Pump designation: PE8P120A320LS7839

: -10

EP type number

: 0412628855

Governor

Governer design. : RQ300/1050PA972-12

Governer no. : 0421801759

Cust. part No. : 0250749302

Customer-spec. information Customer : MB-NFZ Motor : 0M442 LA Power KW : 370.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1417413047

Inlet press. bar : Tolerance bar 0.1

Tolerance l/h : +- 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

: 1409918004 Lube oil

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 1000

REMARKS

# (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.05 Tolerance mm : + 0.05

test only : +- 0.10

Rack travel in mm : 14.50 Tolerance mm :  $\leftarrow$  0.50

: 8-7-2-6-3 :-5-4-1 Firing order

Phasing : 0-45-90-135-180 : -225-270-315

: +- 0.30Tolerance

Check

tolerance \*NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

550 Rated speed rpm :

Rack travel in mm: 15.20

Tolerance mm : +- 0.05 +	
<u></u>	Rated speed rpm : 570
Del. quantity	guide sleeve
cm3/1000 strokes : 289.0	travel mm : 6.00 Tolerance mm : +- 0.10
Tolerance	Toterance inti
cm3/1000 strokes : + 1.0 +	Rated speed rpm : 1280
<del></del> +	guide sleeve
Check tolerance	travel mm : 11.50
cm3/1000s. : +- 4.0	Tolerance mm : + 0.50
Spreed	
Tolerance +	GUIDE SLEEVE POSITION
cm3/1000 strokes : 6.0 +	
Check tolerance	Rated speed rpm : 600
cm3/1000s. : 9.0	Rack travel in mm : 20.00
1	Tolerance mm : +- 0.80
2nd speed rpm : 300	
Pools through in many 5 30	FIRE LOAD BELTWEDY AT THE LOAD CTOP
Rack travel in mm: 5.20 + Tolerance mm: + 0.30 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	Rated speed rpm : 550
cm3/1000 strokes : 19.0	Aneroid pressure
Tolerance +	hPa : 1200
cm3/1000 strokes : + 3.0 + Check tolerance	Del. quantity cm3/1000 strokes : ^9.0
cm3/1000s. : +- 6.0 +	Tolerance
Spreed	cm3/1000 strokes : +- 1.0
Tolerance	Check tolerance
cm3/1000 strokes : 6.0	cm3/1000s. : +- 4.0
Check tolerance + cm3/1000s. : 10.0 +	Spreed Tolerance
cm3/1000s. : 10.0	cm3/1000 strokes : 6.0
1	Check tolerance
(B) SETTING OF INJECTION PUMP	cm3/1000s. : 9.0
WITH GOVERNOR	
<u> </u>	RATED SPEED
GUIDE SLEEVE TRAVEL	MATED OF LED
<del> †</del>	
Rated speed rpm : 300	control lever
guide sleeve + travel mm : 1.94 +	position degree : 98.0 tolerance degree : +- 4.0
Tolerance mm : + 0.10	toterance degree . Fin 4.0
<del>}</del>	rack travel mm : 14.20
Rated speed rpm : 1104	Rated speed rpm : 1098 _
guide sleeve + travel mm : 6.34 +	Tolerance 1/min : +- 5
Tolerance mm : ÷ 0.10	rack travel mm : 4.00
Total dilac limit	Rated speed rpm : 1195
Rated speed rpm : 1050	Tolerance 1/min : + 15
guide sleeve	mode Annual on the Control of the Co
travel mm : 6.00 + 0.10	rack travel mm : 0.75 Tolerance mm : +- 0.75
TO COLOR MINING TO THE USE OF THE COLOR MINING THE COLOR	Rated speed rpm : 1350
Rated speed rpm : 414	open i più
guide sleeve +	
travel mm : 4.51 +	LOW IDLE
Tolerance mm : + 0.10 +	

control lever position degree tolerance degree	: 73.0 · + 4.0	+ rack travel mm : 11.65 Tolerance mm : ← 0.20
Testing:		START CUT-OUT
· ·	. 700	Rated speed rpm : > 190
Rated speed rpm	: 500	+ Check + speed 1/min :> 170
rack travel mm Tolerance mm	. 5.20	+ speed 1/min :> 170 + Rated speed rpm : < 220
loterance likil	. +- 0.10	Check
rack travel mm	: 2.00	speed 1/min : < 240
Rated speed rpm		
Tolerance 1/min	: +- 20	
10101 01100 1111111		↓ FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	
•		Aneroid pressure
CRT mm min.	: > 8.20	+ hPa : 500
		Rated speed rpm : 400
		† Del. quantity
TORQUE CONTROL		+ cm3/1000 strokes : 196.0
		+ Tolerance
Rated speed rpm	: 550	+ cm3/1000 strokes : +- 1.5
rack travel mm		+ Check tolerance
Tolerance mm	: +- U.U5	+ cm3/1000s. : + 4.5
Dated aread non	. 750	Anomaid massums
Rated speed rpm	: 15.20	+ Aneroid pressure + hPa : 1200
rack travel mm Tolerance mm	: +- 0.05	+ Rated speed rpm : 750
TOTEL GLICE UNI	. • 0.05	+ Del. quantity
Rated speed rpm	: 1050	+ cm3/1000 strokes : 274.5
rack travel mm		+ Tolerance
Tolerance mm	: + 0.10	+ cm3/1000 strokes : +- 3.0
		+ Check tolerance
		+ cm3/1000s. : +- 6.0
ANEROID/ALTITUDE		†
COMPENSATOR TEST		+ Aneroid pressure
		+ hPa : 1200
0		+ Rated speed rpm : 1050
SETTING		+ Del. quantity
Datad aroad arm	: 400	+ cm3/1000 strokes : 269.0
Rated speed rpm		+ Tolerance + cm3/1000 strokes : +- 3.0
Pressure hPa rack travel mm	• 15 20	Check tolerance
Tolerance mm	: + 0.05	+ cm3/1000s. : +- 6.0
10001 47100 11117		
MEASUREMENT		+ Aneroid pressure
		+ hPa : -
Pressure hPa	: -	+ Rated speed rpm : 500
Rated speed rpm		+ Del. quantity
rack travel mm Tolerance mm	: 8.25	+ cm3/1000 strokes : 136.0
Tolerance mm	: <b>+</b> 0.15	† Tolerance
O-A-4	. (00	cm3/1000 strokes : + 1.0
Rated speed rpm	: 400	+ Check tolerance + cm3/1000s. : + 4.0
December 600	• 300	+ cm3/1000s. : +- 4.0 + Spreed
Pressure hPa rack travel mm	: 300 : 9.95	Tolerance
Tolerance mm	: + 0.20	+ cm3/1000 strokes : 8.0
TO COL GLICE MIN	0.20	Check tolerance
Pressure hPa	: 500	+ cm3/1000s. : 12.0
	· चच	1

E03

# **BREAKAWAY**

Rack travel in mm: 14.20 Rated speed rpm : 1098 Tolerance 1/min

# STARTING FUEL DELIVERY

Rated speed rpm 100 Del. quantity cm3/1000 strokes :

255.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : + 24.0

# LOW IDLE

300 Rated speed rpm 5.20 rack travel mm : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed

Tolerance

cm3/1000 strokes :

6.0

Check tolerance

cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.03.95 Edition Test oil : ISO 4113

Combination No. : 0402648985

## Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0412628855

Governor

Governer design. : RQ300/1050PA993-10

: 0421801760 Governer no.

Cust. part No. : 0250749502

Customer-spec. information : MB-NFZ Customer Motor : 0M442 LA : 370.0 Power KW

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : Tolerance bar : +-0.1

Tolerance l/h: + 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

: 1409918004 Lube oil

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : +- 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm: 14.50 : +- 0.50 Tolerance mm

: 8-7-2-6-3 :-5-4-1 Firing order

: 0-45-90-135-180 Phasing

: -225-270-315

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  : + 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 15.20

Tolerance mm	: ← 0.05 4	_
TOTOL GITTO TIME		- Rated speed rpm : 510
Del. quantity	1	- guide sleeve
cm3/1000 strokes	: 289.0	- travel mm : 6.00
Tolerance		- Tolerance mm : +- 0.10
cm3/1000 strokes	: : +- 1.0	- Rated speed rpm : 1280
		- guide sleeve
Check tolerance	†	- travel mm : 11.50
cm3/1000s.	: +- 4.0	- Tolerance mm : +- 0.50
Spreed		
Tolerance	+	- GUIDE SLEEVE POSITION
cm3/1000 strokes	: 6.0	
Check tolerance	<u> </u>	- Rated speed rpm : 600
cm3/1000s.	: 9.0	Rack travel in mm : 20.00
	+	Tolerance mm : + 0.80
2nd speed rpm	: 300	•
Rack travel in m	m: 5.20	EIII LOAD DELTUEDY AT FULL LOAD OTOD
Tolerance mm	": + 0.30 T	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	1	Rated speed rpm : 550
cm3/1000 strokes	: 19.0	Aneroid pressure
Tolerance cm3/1000 strokes	: <del></del>	hPa : 1200 Del. quantity
Check tolerance	I 3.0	cm3/1000 strokes : 79.0
cm3/1000s.	: +- 6.0	Tolerance
Spreed	+	cm3/1000 strokes : + 1.0
Tolerance	·	Check tolerance
cm3/1000 strokes Check tolerance	: 6.0	cm3/1000s. : +- 4.0 Spreed
cm3/1000s.	: 10.0	Tolerance
	+	cm3/1000 strokes : 6.0
(D) 0577710 05 71	THE TENT OF THE	Check tolerance
(B) SETTING OF IN WITH GOVERNOR	ATECITON DOWN	cm3/1000s. : 9.0
KTIII GOVERNON	1	
		RATED SPEED
GUIDE SLEEVE TRAV	/EL +	
Rated speed rpm	: 300	control lever
guide sleeve	. 555	position degree : 98.0
travel mm	: 1.85	tolerance degree : + 4.0
Tolerance mm	: + 0.10 +	pook though mm . 1/ 20
Rated speed rpm	: 1104	rack travel mm : 14.20 Rated speed rpm : 1098
guide sleeve	+	Tolerance 1/min : +- 5
travel mm	: 6.34	
Tolerance mm	: + 0.10	rack travel mm : 4.00
Rated speed rpm	: 1050	Rated speed rpm : 1195 Tolerance 1/min : +- 15
guide sleeve	. 1050	TOCCIONIOC IZNIMIT
travel mm	: 6.00	rack travel mm : 0.75
Tolerance mm	: ← 0.10 +	Tolerance mm : + 0.75
Rated speed rpm	: 271	Rated speed rpm : 1350
guide sleeve	·	
travel mm	: 1.33	LOW IDLE
Tolerance mm	: + 0.10 +	

control lever position degree tolerance degree	: 69.0 : +- 4.0	‡	rack travel mm Tolerance mm	: 11.65 : + 0.20
Testing:		‡	START CUT-OUT	
Rated speed rpm	: 300	<u> </u>	Rated speed rpm Check	: > 100
rack travel mm	: 3.50	1	speed 1/min	: > 80
rack travel mm Tolerance mm	: + 0.10	1	Rated speed rpm	: < 220
		1	Check	
rack travel mm	2.00	1	speed 1/min	: < 240
Rated speed rpm	: 350	1	•	
Rated speed rpm Tolerance 1/min	: +- 20	+		<del></del>
		+	FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm	: 200	+		
		+	Aneroid pressure	
CRT mm min.	: > 5.50	+	hPa	: 500
		+	Rated speed rpm	: 400
<del></del>	<del></del>	<del></del> }	Del. quantity	
TORQUE CONTROL		+	cm3/1000 strokes	: 196.0
		+	Tolerance	
Rated speed rpm	: 550	+	cm3/1000 strokes	: ← 1.5
rack travel mm	: 15.20	+	Check tolerance	
Tolerance mm	: ← 0.05	+	cm3/1000s.	: <del>+-</del> 4.5
		+		
Rated speed rpm rack travel mm	: 750	+	Aneroid pressure	
rack travel mm Tolerance mm	: 15.20	+	hPa	: 1200
Tolerance mm	: <b>←</b> 0.10	+	Rated speed rpm	: 750
- · · · · · · · · · · · · · · · · · · ·	4050	†	Del. quantity	
Rated speed rpm	: 1050	†	cm3/1000 strokes	: 274.5
rack travel mm Tolerance mm	: 15.20	†	Tolerance	. 7.0
loterance mm	: + 0.10	†	cm3/1000 strokes	
		†	Check tolerance	
ANEDOTO (AL TITUDE			cm3/1000s.	: ← 6.0
ANEROID/ALTITUDE		<b>T</b>	Anomaid massaums	
COMPENSATOR TEST		T	Aneroid pressure hPa	: 1200
		Ţ		
SETTING		Ī	Rated speed rpm	
2E11114G		I	Del. quantity cm3/1000 strokes	
Rated speed rpm	: 400	I	Tolerance	. 209.0
Pressure hPa		1	cm3/1000 strokes	• +- 30
rack travel mm	: 15.20	1	Check tolerance	
Tolerance mm	: + 0.05	1	cm3/1000s.	
, - 10		1		
MEASUREMENT		+	Aneroid pressure	
		+	hPa	: -
Pressure hPa	: -	+	Rated speed rpm	: 500
Rated speed rpm	400	+	Del. quantity	
rack travel mm	: 8.25	+	cm3/1000 strokes	: 136.0
rack travel mm Tolerance mm	: + 0.15	+	Tolerance	
		+	cm3/1000 strokes	
Rated speed rpm	: 400	+	Check tolerance	
<b>.</b>	700	+	cm3/1000s.	: +- 4.0
Pressure hPa	: 300	+	Spreed	
rack travel mm	: 9.95	+	Tolerance	
Tolerance mm	: ← 0.20	†	cm3/1000 strokes	: 8.0
B		†	Check tolerance	40.0
Pressure hPa	: 500	+	cm3/1000s.	: 12.0

## BREAKAWAY

Rack travel in mm: 14.20 Rated speed rpm: 1098 Tolerance 1/min: +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 255.0 Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

Check tolerance cm3/1000s.

cm3/1000s. : +- 24.0

## LOW IDLE

Rated speed rpm 300 rack travel mm 5.20 Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0

10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402648987

# Injection pump

Pump designation : PE8P12OA32OLS7838

: -10

EP type number : 0412628854

Governor

Governer design. : RQV300...950PA1199

: -2

: 0421814144 Governer no.

Cust. part No. : 0250746202

Customer-spec. information Customer : MB-NFZ Motor : 0M442 LA Power KW : 320.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5 Tolerance bar 0.1

Tolerance l/h : **←** 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

bar 208.5 Tolerance bar 1.5

Lube oil : 1409918004 Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter: x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.25 : + 0.05Tolerance mm

test only : + 0.10

Rack travel in mm: 20.50 Tolerance mm : + 0.50

: 8-7-2-6-3 Firing order : - 5- 4- 1

: 0-45-90-135-180 Phasing : -225-270-315

: +- 0.30 Tolerance

Check

tolerance °NW : + 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

	1
Dool though in mm . 45 00	guide sleeve
Rack travel in mm : 15.00 Tolerance mm : +- 0.05	+ travel mm : 5.23
Tolerance mm : +- 0.05	+ Tolerance mm : + 0.25
Dol montitue	T Dated aread area. 700
Del. quantity	Rated speed rpm : 780
cm3/1000 strokes : 254.0	+ guide sleeve
Talanana	+ travel mm : 6.31
Tolerance	+ Tolerance mm : + 0.25
cm3/1000 strokes : +- 1.0	†
	+ Rated speed rpm : 1092
Check tolerance	+ guide sleeve
cm3/1000s. : +- 4.0	+ travel mm : 10.00
On a seed	+ Tolerance mm : + 0.25
Spreed	†
Tolerance	+ Rated speed rpm : 1190
cm3/1000 strokes : 6.0	+ guide sleeve
	+ travel mm : 11.50
Check tolerance	+ Tolerance mm : + 0.50
cm3/1000s. : 9.0	†
2 1 702	
2nd speed rpm : 300	+ GUIDE SLEEVE POSITION
Deal America Inc.	†
Rack travel in mm: 6.10	t
Tolerance mm : + 0.30	t control lever
Del. quantity	+ position degree : -1
cm3/1000 strokes : 19.0	+ Rated speed rpm : 1045
Tolerance	†
cm3/1000 strokes : + 3.0	+ Rack travel in mm : 14.00
Check tolerance	† Tolerance mm : +- 1.30
$cm3/1000s.$ : $\leftarrow$ 6.0	†
Spreed	
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 6.0	†
Check tolerance	Rated speed rpm : 550
cm3/1000s. : 10.0	Aneroid pressure
·	+ hPa : 1000
	Del. quantity
(B) SETTING OF INJECTION PUMP	Del. quantity cm3/1000 strokes : 254.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Del. quantity cm3/1000 strokes : 254.0 Tolerance
	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0
WITH GOVERNOR	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
GUIDE SLEEVE TRAVEL  Rated speed rpm : 300	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 122.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567 guide sleeve	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567 guide sleeve travel mm : 567 guide sleeve travel mm : 4.66	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 122.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567 guide sleeve	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 122.0 tolerance degree : + 4.0  rack travel mm : 14.00
GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567 guide sleeve travel mm : 567 guide sleeve travel mm : 4.66 Tolerance mm : + 0.25	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED   control lever position degree : 122.0 tolerance degree : + 4.0  rack travel mm : 14.00 Rated speed rpm : 995
GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567 guide sleeve travel mm : 567 guide sleeve travel mm : 4.66	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 122.0 tolerance degree : + 4.0  rack travel mm : 14.00
GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 1.29 Tolerance mm : + 0.20  Rated speed rpm : 1012 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 567 guide sleeve travel mm : 567 guide sleeve travel mm : 4.66 Tolerance mm : + 0.25	Del. quantity cm3/1000 strokes : 254.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED   control lever position degree : 122.0 tolerance degree : + 4.0  rack travel mm : 14.00 Rated speed rpm : 995

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm LOW IDLE	: 1105 : +- 15 : 0.75 : +- 0.75	Rated speed rpm : 400  Pressure hPa : 250 rack travel mm : 10.95 Tolerance mm : + 0.15  Pressure hPa : 550 rack travel mm : 13.85 Tolerance mm : + 0.15
control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm	: + 4.0 : 300 : 4.50	START CUT-OUT  Rated speed rpm : > 190 Check speed 1/min : > 170 Rated speed rpm : < 220 Check speed 1/min : < 240
Rated speed rpm CRT mm min.		FUEL DELIVERY CHARACTERISTICS  Aneroid pressure  hPa : 550
CONTINUOUS-ACTION	N CONTROL	- + Rated speed rpm : 79 - Del. quantity
Rated speed rpm	: 325	+ cm3/1000 strokes : 209.0 + Tolerance + cm3/1000 strokes : +- 1.5
TORQUE CONTROL		− + Check tolerance + cm3/1000s. : + 4.5
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: 15.00 : +- 0.05 : 950	Aneroid pressure hPa : 1000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 242.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST SETTING		- cm3/1000s. : + 6.0 - spreed - Tolerance - cm3/1000 strokes : 8.0 - Check tolerance - cm3/1000s. : 12.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : 15.00	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 135.0 Tolerance
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed

Tolerance cm3/1000 strokes : Check tolerance

8.0

cm3/1000s.

12.0

**BREAKAWAY** 

Rack travel in mm : Rated speed rpm

14.00

5 Tolerance 1/min

STARTING FUEL DELIVERY

Rated speed rpm

100

Del. quantity

cm3/1000 strokes : Tolerance

235.0

cm3/1000 strokes : + 20.0 Check tolerance

cm3/1000s.

: +- 24.0

LOW IDLE

Rated speed rpm

300

:

rack travel mm Tolerance mm

6.10

Del. quantity

: + 0.30

cm3/1000 strokes

19.0

Tolerance

cm3/1000 strokes Check tolerance

3.0 : +--

cm3/1000s.

6.0

Spreed

Tolerance cm3/1000 strokes :

6.0

Check tolerance

cm3/1000s.

10.0

E12

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402648992

# Injection pump

Pump designation : PE8P120A320LS7847-2

EP type number : 0412628885

#### Governor

Governer design. : RQV300...1050PA1033

: -21

Governer no. : 0421814145

Cust. part No. : 0250747502

Customer—spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 280.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 170 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

	+	guide sleeve
Rack travel in mm		travel mm : 5.03
Tolerance mm	: +- 0.05 +	Tolerance mm : +- 0.25
D=1		D. I. I
Del. quantity	770.0	Rated speed rpm : 820
cm3/1000 strokes	: 239.0	guide sleeve
·	<del></del>	travel mm : 6.13
Tolerance	†	Tolerance mm : + 0.25
cm3/1000 strokes	: + 1.0 +	
		Rated speed rpm : 1183
Check tolerance	· , , , , , , , , , , , , , , , , , , ,	guide sleeve
cm3/1000s.	: + 4.0 +	travel mm : 10.00
	<del></del>	Tolerance mm : + 0.25
Spreed	†	
Tolerance	<b>†</b>	Rated speed rpm : 1280
cm3/1000 strokes	: 6.0	guide sleeve
	<del></del>	travel mm : 11.50
Check tolerance	<u> </u>	Tolerance mm : + 0.50
cm3/1000s.	: 9.0	
	700	
2nd speed rpm	: 300 +	GUIDE SLEEVE POSITION
	+	
Rack travel in mm		
Tolerance mm	: + 0.30 +	control lever
Del. quantity	<b></b> †	position degree : - 1
cm3/1000 strokes	: 13.0 +	Rated speed rpm : 1140
Tolerance	<u> </u>	
cm3/1000 strokes	: <del>←</del> 3.0 +	Rack travel in mm: 13.30
Check tolerance	<u> </u>	Tolerance mm : $+$ 1.30
cm3/1000s.	: ← 6.0 +	
Spreed	+	
Tolerance	+	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: 8.0	
Check tolerance	+	Rated speed rpm : 550
cm3/1000s.	: 10.0	Aneroid pressure
	†	hPa : 1200
<b></b>	†	Del. quantity
(B) SETTING OF INJ	JECTION PUMP	cm3/1000 strokes : 239.0
WITH GOVERNOR	†	Tolerance
	†	cm3/1000 strokes : +- 1.0
		Check tolerance
GUIDE SLEEVE TRAVE	<del>-</del> L †	cm3/1000s. : +- 4.0
5.4. 1	700	Spreed
Rated speed rpm	: 300 +	Tolerance
guide sleeve	1 20	cm3/1000 strokes : 6.0
travel mm	: 1.29	Check tolerance
Tolerance mm	: <del>+-</del> 0.20 +	cm3/1000s. : 9.0
	†	
Rated speed rpm	: 1110 +	DATED OPEN
guide sleeve	2.52	RATED SPEED
travel mm	: 8.58	
Tolerance mm	: ← 0.15 +	control layer
Data dance dance	+	control lever
Rated speed rpm	: 558	position degree : 121.0
guide sleeve	· / - +	tolerance degree : +- 4.0
travel mm	+ 4.53	made Annual man 42.20
Tolerance mm	: +- 0.25	rack travel mm : 13.30
On the classes of the	†	Rated speed rpm : 1095
Rated speed rpm	: 608	Tolerance 1/min : +- 5
	+	

rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : + 15  rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1350  LOW IDLE  control lever position degree : 66.0 tolerance degree : + 4.0	Pressure hPa       : -         Rated speed rpm       : 400         rack travel mm       : 11.35         Tolerance mm       : + 0.20         Rated speed rpm       : 400         Pressure hPa       : 300         rack travel mm       : 12.55         Tolerance mm       : + 0.20         Pressure hPa       : 450         rack travel mm       : 13.85         Tolerance mm       : + 0.20
Testing:	START CUT-OUT
Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : + 0.10  Rated speed rpm : 200  CRT mm min. : > 7.30	Rated speed rpm : > 100 Check speed 1/min : > 80 Rated speed rpm : < 220 Check speed 1/min : < 240
CONTINUOUS-ACTION CONTROL	FUEL DELIVERY CHARACTER TICS
Rated speed rpm : 375	Aneroid pressure hPa : 450 Rated speed rpm : 400
TORQUE CONTROL	Del. quantity cm3/1000 strokes : 198.0 Tolerance
Rated speed rpm : 550	cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5
Rated speed rpm : 1050 rack travel mm : 14.30 Tolerance mm : +- 0.10  Rated speed rpm : 850	Aneroid pressure hPa : 1200 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 217.0
rack travel mm : 14.50 Tolerance mm : + 0.10	Tolerance cm3/1000 strokes : +- 2.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST	<pre>cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0</pre>
SETTING	Check tolerance cm3/1000s. : 12.0
Rated speed rpm : 400 Pressure hPa : 1200 rack travel mm : 14.80 Tolerance mm : +- 0.05  MEASUREMENT	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 144.0 Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.4.0 : +-Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 BREAKAWAY Rack travel in mm: 13.30 Rated speed rpm Tolerance 1/min STARTING FUEL DELIVERY 100 Rated speed rpm : Del. quantity 210.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s.: +- 24.0 LOW IDLE 300 Rated speed rpm 5.70 rack travel mm : +- 0.30 Tolerance mm Del. quantity 13.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 10.0

Note remarks -

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition

: 17.03.95

Test oil

: ISO 4113

Combination No. : 0402648993

Injection pump

Pump designation : PE8P12OA320LS7838

: -10

EP type number : 0412628854

Governor

Governer design. : RQ300/950PA971-11

Governer no. : 0421801764

Cust. part No. : 0260740202

Customer-spec. information

Customer : MB-NFZ

Motor

: 0M442 LA

Power KW

: 320.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. \*C

Tolerance °C

2.0

Overflow valve

: 1417413047

Inlet press. bar :

1.5

Tolerance bar

: +- 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly

: 1688901105

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter:

3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : +- 0.10

Rack travel in mm: 20.50

Tolerance mm :  $\leftarrow$  0.50

: 8-7-2-6-3 Firing order

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance

: +- 0.30

Check

tolerance °NW

: **←** 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

On all Americal Services	45.00	guide sleeve	
Rack travel in mm :		travel mm	: 4.76
Tolerance mm : +	- 0.05	Tolerance mm	: <del>+-</del> 0.10
Dol months.	<del></del>		500
Del. quantity	- T	Rated speed rpm	: 580
cm3/1000 strokes :	254.0	guide sleeve	
	<del></del>	travel mm	: 6.00
Tolerance	<u> </u>	Tolerance mm	: +- 0.10
cm3/1000 strokes : +	- 1.0 +		
		Rated speed rpm	: 1190
Check tolerance	<u> </u>	guide sleeve	
cm3/1000s. : +-	- 4.0 +	travel mm	: 11.50
0	<del></del>	Tolerance mm	: +- 0.50
Spreed	†		
Tolerance	†		
cm3/1000 strokes :	6.0	GUIDE SLEEVE POSIT	ION
Ohand Andrews		~ · · ·	400
Check tolerance	†	Rated speed rpm	: 600
cm3/1000s. :	9.0		00.00
31	700	Rack travel in mm	
2nd speed rpm :	300 +	Tolerance mm	: +- 0.80
David Amazini (***	†		
Rack travel in mm :	6.10		
Tolerance mm : +	- 0.30 +	FULL LOAD DELIVERY	AT FULL LOAD STOP
Del. quantity	10.0		550
cm3/1000 strokes :	19.0	Rated speed rpm	: 550
Tolerance	7.0	Aneroid pressure	44.00
cm3/1000 strokes : +-	- 3.0 +	hPa	: 1000
Check tolerance	†	Del. quantity	051.0
cm3/1000s. : +-	- 6.0 +	cm3/1000 strokes	: 254.0
Spreed	†	Tolerance	
Tolerance	t t	cm3/1000 strokes	: <del>+-</del> 1.0
cm3/1000 strokes :	6.0	Check tolerance	
Check tolerance	10.0	cm3/1000s.	: <del>←</del> 4.0
cm3/1000s. :	10.0	Spreed	
	†	Tolerance	
(D) APPETING AP THE COTT	+		: 6.0
(B) SETTING OF INJECTI	ON PUMP	Check tolerance	
WITH GOVERNOR	†	cm3/1000s.	: 9.0
	†		
CHARLE CHECKE TOWNER	<u> </u>	DATES OFFE	
GUIDE SLEEVE TRAVEL	†	RATED SPEED	
Dated speed upp	700		
Rated speed rpm :	300 +	sambust Lavan	
guide sleeve	1.72	control lever	. 00 0
travel mm :	0.10	position degree	: 98.0
Tolerance mm : +-	· · · · · · · · · · · · · · · · · · ·	tolerance degree	: +- 4.0
Sotod spood sps	1005	rack travel mm	: 14.00
Rated speed rpm : guide sleeve	1003		: 14.00 : 998
	6.34 I	Rated speed rpm Tolerance 1/min	· + 8
	0.10	Toterance Timin	. +- 0
Tolerance mm : +	†	rack travel mm	: 4.00
Dottod amond nam	050		
Rated speed rpm :	950 +	Rated speed rpm Tolerance 1/min	: 1100
guide sleeve	6.00	Toterance Timin	: +- 15
travel mm : +	0.10	rack travel mm	: 0.75
Toterance nan : T	7		: + 0.75 : + 0.75
Pated speed non .	451	Tolerance mm Rated speed rpm	1200
Rated speed rpm :	T	waren sheen thii	. 1200
	T		

LOW IDLE	
control lever position degree tolerance degree	: 74.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.10 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 430 : + 30
Rated speed rpm	: 200
CRT mm min.	: > 9.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 550 : 15.00 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 15.00 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	<del></del>
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : 1000 : 15.00 : +- 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: : 400 : 9.10 : +- 0.15
Rated speed rpm	: 400
Pressure hPa rack travel mm Tolerance mm	: 250 : 10.95 : + 0.15
Pressure hPa	: 550

rack travel mm Tolerance mm	: 13.85 : + 0.15
START CUT-OUT	
Rated speed rpm Check	: > 190
speed 1/min Rated speed rpm	: > 170 : > 220
Check speed 1/min	: > 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm Del. quantity	: 550 : 400
cm3/1000 strokes Tolerance	: 209.0
cm3/1000 strokes Check tolerance	: <del>+-</del> 1.5
cm3/1000s.	: +- 4.5
Aneroid pressure hPa	: 1000
Rated speed rpm Del. quantity	: 950
cm3/1000 strokes Tolerance	: 242.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s. Spreed Tolerance	: +- 6.0
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 135.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000S. Spreed Tolerance	: +- 4.0
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0

14.00 Rack travel in mm: Rated speed rpm : Tolerance 1/min : +-

# STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity cm3/1000 strokes : 235.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : **←** 24.0

## LOW IDLE

Rated speed rpm 300 6.10 rack travel mm Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s.6.0

Spreed

Tolerance cm3/1000 strokes :

6.0

Check tolerance

cm3/1000s. 10.0 Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.03.95 Edition Test oil : ISO 4113

Combination No. : 0402648994

Injection pump

Pump designation : PE8P120A320LS7838

: -10

: 0412628854 EP type number

Governor

: RQV300...950PA797 Governer design.

: -41

: 0421814126 Governer no.

: 0260740302 Cust. part No.

Customer-spec. information : MB-NFZ Customer Motor : 0M442 LA Power KW : 320.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5 Tolerance bar 0.1

Tolerance L/h : **←** 10.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 Tolerance bar : +- 1.5

: 1409918004 Lube oil

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: Tolerance bar : + 1.0

Prestroke mm 5.25 : +- 0.05 Tolerance mm

test only : ← 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

: 8-7-2-6-3 :-5-4-1 Firing order

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : + 0.30

Check

tolerance \*NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rack travel in mm : Tolerance mm : +-	15.00	guide sleeve travel mm Tolerance mm	: 5.23 : + 0.25
Del. quantity cm3/1000 strokes :	254.0	Rated speed rpm guide sleeve travel mm	: 780 : 6.31
Tolerance cm3/1000 strokes : +-	- 1.0	Tolerance mm	: <b>+</b> 0.25
Check tolerance cm3/1000s. :+	- 4.0	Rated speed rpm guide sleeve travel mm	: 10.00
Spreed Tolerance cm3/1000 strokes :	6.0	Tolerance mm  Rated speed rpm guide sleeve	: + 0.25 : 1190
Check tolerance	9.0	travel mm Tolerance mm	: 11.50 : + 0.50
cm3/1000s. :	j.u I		
2nd speed rpm :	300	GUIDE SLEEVE POSIT	FION
Rack travel in mm :	6.10		
	- 0.30	control lever	
Del. quantity	4	position degree	: - 1
cm3/1000 strokes : Tolerance	19.0	Rated speed rpm	
cm3/1000 strokes : +-	· 3.0 +	Rack travel in mm	
Check tolerance	<u> </u>	Tolerance mm	: <del>+</del> 1.30
cm3/1000s. : +-	- 6.0 +		
Spreed	†	F. 1. 1. 0.1. D. T. T. (F.)	4 AT 5141 1 000 0700
Tolerance	10	FULL LOAD DELIVERY	AT FULL LOAD STOP
cm3/1000 strokes :	6.0	Data dan and our	550
Check tolerance	10.0	Rated speed rpm	: 550
cm3/1000s. :	10.0	Aneroid pressure hPa	: 1000
	Ī	Del. quantity	: 1000
(B) SETTING OF INJECTION	ON DIMD	cm3/1000 strokes	: 254.0
WITH GOVERNOR	I	Tolerance	. 234.0
WITH GOVERNOR	$\mathbf{I}$	T 14000	: + 1.0
		Check tolerance	
GUIDE SLEEVE TRAVEL	1	cm3/1000s.	: <del>+-</del> 4.0
	1	Spreed	113
Rated speed rpm :	300	Tolerance	
guide sleeve	+	cm3/1000 strokes	: 6.0
travel mm :	1.29	Check tolerance	
	0.20	cm3/1000s.	: 9.0
Rated speed rpm : '	1012 I		
guide sleeve	$\mathbf{I}$	RATED SPEED	
travel mm :	8.60	NATED SPEED	
	0.15		
roterance likit	I	control lever	
Rated speed rpm :	567	position degree	: 123.0
guide sleeve	<u>I</u>		
travel mm :	4.66	to con united degree	υ · · · · · · <b>· · · · · ·</b>
	0.25	rack travel mm	: 14.00
, o to a not half	1	Rated speed rpm	: 995
Rated speed rpm :	617	Tolerance 1/min	· + ´´ 5
	ì		

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm LOW IDLE	: 1100 : + 15 : 0.75 : + 0.75	+ + + + + + +	Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm	: 250 : 10.95 : + 0.15
FOM TOPE		Į	loterance mm	: +- 0.15
control lever position degree tolerance degree		+ + + +	START CUT-OUT Rated speed rpm Check	: > 190
Testing:		+	speed 1/min	: > 170
Rated speed rpm rack travel mm Tolerance mm	: 6.10	† †	Rated speed rpm Check speed 1/min	
Rated speed rpm	: 500	1	FUEL DELIVERY CHA	ARACTERISTICS
CRT mm min.	: > 8.90	‡	Aneroid pressure hPa	: 550
CONTINUOUS-ACTION	CONTROL	<del></del> ‡	Rated speed rpm Del. quantity	
Rated speed rpm	: 350	†	cm3/1000 strokes Tolerance cm3/1000 strokes	: ← 1.5
TORQUE CONTROL			Check tolerance cm3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: 15.00	† †	Aneroid pressure hPa Rated speed rpm Del. quantity	: 1000
Rated speed rpm rack travel mm Tolerance mm		Ī	cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	
ANEROID/ALTITUDE COMPENSATOR TEST			cm3/1000s. Spreed Tolerance cm3/1000 strokes	: + 6.0 : 8.0
SETTING		<del>-</del>	Check tolerance cm3/1000s.	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : 15.00	+++++++++++++++++++++++++++++++++++++++	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 400 : 9.10 : + 0.15	T + + +	cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: + 1.0 : + 4.0

Tolerance cm3/1000 strokes : 8.0 Check tolerance 12.0 cm3/1000s. **BREAKAWAY** Rack travel in mm : 14.00 Rated speed rpm Tolerance 1/min STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 235.0 Tolerance cm3/1000 strokes :  $\leftarrow$  20.0 Check tolerance cm3/1000s. : +- 24.0 LOW IDLE Rated speed rpm 300 6.10 rack travel mm : Tolerance mm : +- 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. • 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.03.95 Test oil : ISO 4113

Combination No. : 0402648995

Injection pump

Pump designation : PE8P12OA32OLS7847-2

EP type number : 0412628885

Governor

Governer design. : RQV300...950PA1168

: -4

Governer no. : 0421814130

Cust. part No. : 0250749602

Customer—spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315Tolerance : + 0.30

Check

tolerance °NW : + 0.75

# BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 14.80

Tolerance mm :	± + 0.05 +	
rocerance mm :	1	Rated speed rpm : 790
Del. quantity	+	guide sleeve
cm3/1000 strokes :	239.0	travel mm : 6.48
Talanana	+	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes :	: + 1.0 <sup>‡</sup>	Rated speed rpm : 1100
(IID) 1000 311 0K63 .	1.0	guide sleeve
Check tolerance	+	travel mm : 10.00
cm3/1000s. :	+ 4.0 +	Tolerance mm : +- 0.25
Spreed		Rated speed rpm : 1210
Tolerance	Ī	guide sleeve
cm3/1000 strokes :	6.0	travel mm : 11.50
Ob male deal amount	+	Tolerance mm : $+-$ 0.50
Check tolerance cm3/1000s. :	9.0	
(IID/10003	j.8 I	GUIDE SLEEVE POSITION
2nd speed rpm :	300	002000000000000000000000000000000000000
	+	
Rack travel in mm : Tolerance mm :	5.70 + 0.30	control lever position degree : - 1
Del. quantity	T 0.50	position degree : - 1 Rated speed rpm : 1035
cm3/1000 strokes :	13.0	
Tolerance	+	Rack travel in mm : 13.00
cm3/1000 strokes : Check tolerance	+ 3.0 +	Tolerance mm : + 1.30
cm3/1000s.	+ 6.0 Ī	
Spreed	1	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+	
cm3/1000 strokes :	8.0	Rated speed rpm : 550
Check tolerance cm3/1000s. :	10.0	Aneroid pressure hPa : 1200
(110) (000)	19.0	Del. quantity
	+	cm3/1000 strokes : 239.0
(B) SETTING OF INJE	CTION PUMP +	Tolerance
WITH GOVERNOR	Ī	cm3/1000 strokes : +- 1.0 Check tolerance
		cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	+	Spreed
Datad annad was	700	Tolerance
Rated speed rpm : guide sleeve	300 🖠	cm3/1000 strokes : 6.0 Check tolerance
travel mm :	1.49	cm3/1000s. : 9.0
Tolerance mm :	+ 0.25	
Dated aread non	1012	DATES COPES
Rated speed rpm : guide sleeve	1012	RATED SPEED
travel mm :	8.56	
Tolerance mm :	+ 0.25	control lever
Dated around name t	589	position degree : 123.0
Rated speed rpm : guide sleeve	J	tolerance degree : +- 4.0
travel mm :	4.97	rack travel mm : 13.00
Tolerance mm :	+ 0.25	Rated speed rpm : 998
Poted enood run	639	Tolerance 1/min : +- 8
Rated speed rpm : guide sleeve	1	rack travel mm : 4.00
travel mm :	5.51	Rated speed rpm : 1090
	+ 0.25	Tolerance 1/min : + 15

rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.75	Pressure hPa : - Rated speed rpm : 400 rack travel mm : 10.60 Tolerance mm : +- 0.20
LOW IDLE		Rated speed rpm : 400
control lever position degree tolerance degree		Pressure hPa : 450 rack travel mm : 12.90 Tolerance mm : + 0.10  Pressure hPa : 300
Testing:		rack travel mm : 11.90 Tolerance mm : + 0.15
Rated speed rpm rack travel mm Tolerance mm	: 300 : 3.50 : +- 0.10	START CUT-OUT
Rated speed rpm	: 200	+ Rated speed rpm :> 100 + Check
CRT mm min.	: > 5.50	speed 1/min :> 80 Rated speed rpm : < 220 Check
CONTINUOUS-ACTION	N CONTROL	speed 1/min : < 240
Rated speed rpm	: 375	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		Aneroid pressure
Rated speed rpm rack travel mm	: 550 : 14.80	+ hPa : 450 + Rated speed rpm : 400 + Del. quantity
Tolerance mm	: <b>←</b> 0.05	cm3/1000 strokes : 166.0 Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 950 : 14.15 : +- 0.10	- cm3/1000 strokes : + 1.5 - Check tolerance - cm3/1000s. : + 4.5
Rated speed rpm rack travel mm Tolerance mm	: 14.35	Aneroid pressure hPa : 1200 Rated speed rpm : 950
Rated speed rpm rack travel mm Tolerance mm	: 820	- Del. quantity - cm3/1000 strokes : 216.0 - Tolerance
Tolerance mm	: + 0.10	+ cm3/1000 strokes : + 2.0 + Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		- cm3/1000s. : + 5.0 - Spreed - Tolerance
OSIN ENOMINEN		+ cm3/1000 strokes : 8.0 + Check tolerance
SETTING		cm3/1000s. : 12.0
Rated speed rpm Pressure hPa	: 1200	Aneroid pressure hPa : -
rack travel mm Tolerance mm	: 14.80	Rated speed rpm : 400  Del. quantity
MEASUREMENT		+ cm3/1000 strokes : 107.0

Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 **BREAKAWAY** Rack travel in mm : 13.00 Rated speed rpm Tolerance 1/min STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm 15.30 : **←** 0.25 Tolerance mm Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance cm3/1000s. : +- 24.0 LOW IDLE Rated speed rpm 300 rack travel mm 5.70 Tolerance mm : +- 0.30 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000s. : 10.0

Note remarks

Refer to Service Info for test and

adjustment instructions.

See microcard(s) W400/...

: 16.03.95 Edition Test oil : ISO 4113

Combination No. : 0402648996

Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0412628855

Governor

Governer design. : RQV300...950PA1199

: -1

Governer no. : 0421814131

Cust. part No. : 0250749702

Customer-spec. information

Customer : MB-NFZ Motor : 0M442 LA

Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1417413047

1.5 Inlet press. bar :

Tolerance bar : + 0.1

Overflow quantity

min. l/h : 75 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

test only : +- 0.10

Rack travel in mm: 14.50 Tolerance mm : + 0.50

: 8-7-2-6-3 Firing order

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.30

Check

tolerance °NW : **←** 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

	1	guide sleeve
		travel mm : 5.23
Rack travel in mm : Tolerance mm	: 15.20 : + 0.05	Tolerance mm : + 0.25
Del. quantity	<u> </u>	Rated speed rpm : 780 guide sleeve
cm3/1000 strokes	289.0	travel mm : 6.31 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes	: ← 1.0 ‡	Rated speed rpm : 1092
Check tolerance cm3/1000s.	+ 4.0	guide sleeve travel mm : 10.00 Tolerance mm : +- 0.25
Spreed	<u> </u>	Rated speed rpm : 1190
Tolerance cm3/1000 strokes :	6.0	guide sleeve travel mm : 11.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	9.0	•
2nd speed rpm :	300 +	GUIDE SLEEVE POSITION
Rack travel in mm :	5.20	nametral lavor
	+ 0.30	control lever position degree : - 1
Del. quantity	<del>- 0.30</del> T	Rated speed rpm : 1030
cm3/1000 strokes :	19.0 I	raceu speeu (piii . 1000
Tolerance	I	Rack travel in mm: 14.20
cm3/1000 strokes : Check tolerance	← 3.0	Tolerance mm : + 1.30
	+ 6.0	
Spreed Tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : Check tolerance	6.0	Rated speed rpm : 550 Aneroid pressure
cm3/1000s. :	10.0	hPa : 1200 Del. quantity
(B) SETTING OF INJE	CTION PUMP	cm3/1000 strokes : 289.0 Tolerance
WITH GOVERNOR	‡	cm3/1000 strokes : + 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	+	cm3/1000s. : +- 4.0 Spreed
Rated speed rpm :	300 ‡	Tolerance cm3/1000 strokes : 6.0
guide sleeve	1	Check tolerance
travel mm :	1.29	cm3/1000s. : 9.0
Tolerance mm :	+ 0.20	
Rated speed rpm : guide sleeve	1009	RATED SPEED
travel mm :	8.55	
	+ 0.15	control lever position degree : 123.0
Rated speed rpm :		
guide sleeve	567	tolerance degree : +- 4.0
	4.66	rack travel mm : 14.20
guide sleeve	+	•

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm  LOW IDLE  control lever position degree	: 1090 : + 15 : 0.75 : + 0.75 : 1250	Pressure hPa       : -         Rated speed rpm       : 400         rack travel mm       : + 0.15         Rated speed rpm       : 400         Pressure hPa       : 300         rack travel mm       : 9.95         Tolerance mm       : + 0.20         Pressure hPa       : 500         rack travel mm       : 11.65         Tolerance mm       : + 0.20
tolerance degree Testing:	: + 4.0	START CUT-OUT
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min.	: 200	Rated speed rpm : > 190 Check speed 1/min : > 170 Rated speed rpm : < 220 Check speed 1/min : < 240
CONTINUOUS-ACTION	I CONTROL	FUEL DELIVERY CHARACTER TICS
Rated speed rpm	: 320	Aneroid pressure hPa : 500 Rated speed rpm : 400
TORQUE CONTROL	Ŧ	Del. quantity cm3/1000 strokes : 196.0
Rated speed rpm rack travel mm Tolerance mm	: 550 : 15.20 : + 0.05	Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5
Rated speed rpm rack travel mm Tolerance mm	: 750 : 15.20 : + 0.05	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 15.20	cm3/1000 strokes : 274.5 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000s. : +- 6.0  Aneroid pressure hPa : 1200
SETTING	<u> </u>	Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 271.0
Rated speed rpm Pressure hPa rack travel mm	: 400 : 1200 : 15.20	Tolerance : + 3.0 Check tolerance
Tolerance mm	: + 0.05	cm3/1900s. : + 6.0
MEASUREMENT	‡	Aneroid pressure hPa : -

Rated speed rpm 500 Del. quantity cm3/1000 strokes : 136.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.12.0 **BREAKAWAY** Rack travel in mm: 14.20 Rated speed rpm : Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 255.0 Tolerance cm3/1000 strokes : + 20.0Check tolerance cm3/1000s. : **←** 24.0 LOW IDLE Rated speed rpm 300 rack travel mm 5.20 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s.10.0

Note remarks

Refer to Service Info for test and

adjustment instructions.

See microcard(s) W400/...

Edition : 17.03.95 Test oil : ISO 4113

Combination No. : 0402648997

Injection pump

Pump designation : PE8P120A320LS7838

: -10

EP type number : 0412628854

Governor

Governer design. : RQ300/950PA993-12

Governer no. : 0421801776

Cust. part No. : 0260740402

Customer-spec. information

: MB-NFZ Customer : 0M442 LA Motor

Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

Tolerance °C 2.0

Overflow valve : 1417413047

Inlet press. bar :

Tolerance bar 1.0 : +--

Tolerance l/h: + 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

208.5 bar

Tolerance bar : +- 1.5

: 1409918004 Lube oil

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0

: 1000 x length mm

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +-

Prestroke mm 5.25 Tolerance mm : +- 0.05

test only : + 0.10

Rack travel in mm: 20.50

: **←** 0.50 Tolerance mm

: 8-7-2-6-3 Firing order

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

550 Rated speed rpm :

Rack travel in mm : Tolerance mm :	+ 15.00 + 0.05	guide sleeve travel mm : 4.91 Tolerance mm : + 0.10
Del. quantity cm3/1000 strokes :	254.0	Rated speed rpm : 500 guide sleeve travel mm : 6.00
Tolerance cm3/1000 strokes :	+ 1.0	Tolerance mm : + 0.10  Rated speed rpm : 1170
Check tolerance cm3/1000s.	+ 4.0	guide sleeve travel mm : 11.50 Tolerance mm : + 0.50
Spreed Tolerance cm3/1000 strokes :	6.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. :	9.0	Rated speed rpm : 600
2nd speed rpm :	300	Rack travel in mm : 20.00 Tolerance mm : + 0.80
Rack travel in mm :	6.10	
Tolerance mm : H	+- 0.30 +	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : Tolerance	19.0	Rated speed rpm : 550 Aneroid pressure
	+ 3.0	hPa : 1000
Check tolerance cm3/1000s. : 4	<b>-</b> 6.0	Del. quantity cm3/1000 strokes : 254.0
Spreed	, J. J. J. J. J. J. J. J. J. J. J. J. J.	Tolerance
Tolerance	+	cm3/1000 strokes : +- 1.0
cm3/1000 strokes : Check tolerance	6.0	Check tolerance cm3/1000s. : +- 4.0
cm3/1000s. :	10.0	Spreed
	†	Tolerance cm3/1000 strokes : 6.0
(B) SETTING OF INJECT	FION PUMP	Check tolerance
WITH GOVERNOR	‡	cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL		RATED SPEED
Dotted amond sum	700	
Rated speed rpm : guide sleeve	300 +	control lever
travel mm :	2.14	position degree : 99.0
Tolerance mm : +	⊢ 0.10 <u>†</u>	tolerance degree : +- 4.0
Rated speed rpm : guide sleeve	1005	rack travel mm : 14.00 Rated speed rpm : 998
travel mm :	6.35	Tolerance 1/min : + 8
Tolerance mm : +	<b>-</b> 0.10	rack travel mm : 4.00
Rated speed rpm : guide sleeve	950	Rated speed rpm : 1090 Tolerance 1/min : +- 15
travel mm :	6.00	
Tolerance mm : +	- 0.10 <del> </del>	rack travel mm : 0.75
Rated speed rpm :	414	Tolerance mm : +- 0.75 Rated speed rpm : 1200
	•	

		‡	rack travel mm Tolerance mm	: 13.85 : + 0.15
LOW IDLE		‡		
aantmal lavan		+	START CUT-OUT	
control lever position degree tolerance degree		1	Rated speed rpm Check	: > 100
Testing:		‡	speed 1/min Rated speed rpm	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 3.70 : + 0.10	‡	Check speed 1/min	: < 240
		+	FUEL DELIVERY CHA	RACTERISTICS
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 355 : +- 20	‡	Aneroid pressure	: 550
Rated speed rpm	: 200	‡	Rated speed rpm Del. quantity	
CRT ma min.	: > 5.70	‡	cm3/1000 strokes Tolerance	: 209.0
		‡	cm3/1000 strokes Check tolerance	: +- 1.5
TORQUE CONTROL		+	cm3/1000s.	: <del>+-</del> 4.5
Rated speed rpm		Ŧ	Aneroid pressure	4. 00
rack travel mm Tolerance mm	: 15.00 : + 0.05	‡	hPa Rated speed rpm	: 1000 : 950
Rated speed rpm	: 950	‡	Del. quantity cm3/1000 strokes	: 242.0
rack travel mm Tolerance mm	: 15.00 : + 0.10	‡	Tolerance cm3/1000 strokes	: <del></del> 3.0
			Check tolerance cm3/1000s.	: +- 6.0
ANEROID/ALTITUDE		Ŧ	Spreed	. +- 0.0
COMPENSATOR TEST		‡	Tolerance cm3/1000 strokes	: 8.0
SETTING		‡	Check tolerance cm3/1000s.	: 12.0
Rated speed rpm	: 400	‡	Aneroid pressure	
Pressure hPa rack travel mm	: 1000 : 15.00	‡	hPa Rated speed rpm	: - : 500
Tolerance mm	: + 0.05	<u>†</u>	Del. quantity cm3/1000 strokes	
MEASUREMENT		Ŧ	Tolerance	
Pressure hPa	: -	‡	cm3/1000 strokes Check tolerance	
Rated speed rpm rack travel mm	: 400 : 9.10	‡	cm3/1000s. Spreed	: +- 4.0
Tolerance mm	: +- 0.15	1	Tolerance cm3/1000 strokes	: 8.0
Rated speed rpm	: 400	+	Check tolerance cm3/1000s.	
Pressure hPa	: 250	Ŧ	CIID/ (UUU).	: 12.0
rack travel mm Tolerance mm	: 10.95 : + 0.20	†	BREAKAWAY	
Pressure hPa	: 550	‡		

Rack travel in mm : 14.00 Rated speed rpm Tolerance 1/min : +-

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 235.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance cm3/1000s. : + 24.0

## LOW IDLE

cm3/1000s.

Rated speed rpm 300 6.10 rack travel mm Tolerance mm : +- 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.03.95 : ISO 4113 Test oil

Combination No. : 0402666802

Injection pump

Pump designation : PE6P12OA32O/3LS7883

EP type number : 0412626938

Governor

Governer design. : RSV600...1050P0A591

Governer no. : 0421833457

Cust. part No. : 0250746802

Customer-spec. information Customer : MB-NFZ : OM 401 LA Motor Power KW : 213.0

### TEST BENCH REQUIREMENTS

Test oil inlet

: 40 temp. °C : + 2.0 Tolerance °C

Overflow valve : 1417413047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: + 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

: +- 0.10 test only

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-: 1

Phasing : 0-60-120-180-240

: -300

: **←** 0.30 Tolerance

Check

tolerance °NW : **←** 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 12.40 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 202.0

Tolerance cm3/1000 strokes : +- 1.0	+ Check tolerance - cm3/1000s. : + 4.0 - Spreed
Check tolerance cm3/1000s. : + 4.0	Tolerance cm3/1000 strokes : 6.0 Check tolerance
Spreed Tolerance cm3/1000 strokes : 6.0	cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	RATED SPEED
2nd speed rpm : 600	control lever position degree : 88.0 tolerance degree : + 4.0
Rack travel in mm: 3.80 Tolerance mm: + 0.30 Del. quantity	LOW IDLE
cm3/1000 strokes : 13.0 Tolerance	<del>}</del>
<pre>cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0</pre>	<pre>+ control lever + position degree : 71.0 + tolerance degree : +- 4.0</pre>
Spreed Tolerance cm3/1000 strokes : 8.0	Testing:
Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 70 rack travel mm : 3.80 Tolerance mm : + 0.10
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 2.00 Rated speed rpm : 630 Tolerance 1/min : + 30
GUIDE SLEEVE POSITION	Rated speed rpm : 100  CRT mm min. : > 19.50
control lever	SET IDLE AUXILIARY SPRING
position degree : - 3 Rated speed rpm : 800	rack travel mm : 2.00
Rack travel in mm : 0.50 Tolerance mm : + 0.20	TORQUE CONTROL
governor spring pre-tension click setting x : 1.50	Rated speed rpm : 1030 rack travel mm : 12.40 Tolerance mm : +- 0.05
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 700 rack travel mm : 12.40 Tolerance mm : +- 0.10
Rated speed rpm : 1030 Aneroid pressure hPa : -	Total dilice likii
Del. quantity cm3/1000 strokes : 202.0 Tolerance	FUEL DELIVERY CHARACTERISTICS
cm3/1000 strokes : +- 1.0	+ Aneroid pressure + hPa : -

700 Rated speed rpm

Del. quantity cm3/1000 strokes :

201.5

3.0

Tolerance

cm3/1000 strokes : ←

Check tolerance

cm3/1000s.

6.0

## STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 180.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s.

: +- 14.0

## LOW IDLE

Rated speed rpm 600 rack travel mm 3.80 Tolerance mm : + 0.30

Del. quantity cm3/1000 strokes :

13.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s.

: +-6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.12.94 Edition Test oil : ISO 4113

Combination No. : 0402736859

Injection pump

Pump designation : PES6P120A120RS7261

EP type number : 0412726876

Governor

Governer design. : RQV350...1100PA924

: -10K

: 0421815429 Governer no.

Cust. part No. : 3282465

Customer-spec. information : CUMMINS Customer Motor : 6CTAA

Power KW : 176.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

208.5 Tolerance bar : <del>+-</del> 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm 3.55 Tolerance mm : +- 0.05

test only : + 0.10

Rack travel in mm : 17.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance \*NW : + 0.50

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking

Barrel no.

7.0 \*NW after s.o.d. : Tolerance : + 0.10

Check

tolerance °NW : +- 0.23

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 10.85 Tolerance mm : +- 0.05

Del. quantity	Spreed
cm3/1000 strokes : 145.0	Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : + 1.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000S. : + 4.0	RATED SPEED
Spreed	
Tolerance - cm3/1000 strokes : 5.0	control lever position degree : 113.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 9.0	rack travel mm : 9.80
2nd speed rpm : 350	Rated speed rpm : 1145 Tolerance 1/min : +- 5
Rack travel in mm: 5.10	rack travel mm : 4.00
Tolerance mm : + 0.30 +	Rated speed rpm : 1255
Del. quantity + cm3/1000 strokes : 26.0 +	Tolerance 1/min : + 15
Tolerance	rack travel mm : 0.50
cm3/1000 strokes : + 3.0 +	Tolerance mm : + 0.50
Check tolerance	Rated speed rpm : 1350
cm3/1000s. : + 5.0 + 5.0	
Tolerance	LOW IDLE
cm3/1000 strokes : 7.0	
Check tolerance + cm3/1000s. : 11.0 +	control lever
11.5	position degree : 68.0
+	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP +	Testing:
WITH GOVERNOR	resumg.
+	Rated speed rpm : 350
CUIDE SI SEVE DOCUTION	rack travel mm : 5.10
GUIDE SLEEVE POSITION	Tolerance mm : +- 0.10
control lever	Rated speed rpm : 250
position degree : -1	CRT mm min. : > 6.60
Rated speed rpm : 1400	
Rack travel in mm: 9.00 + Tolerance mm: + 3.00 +	CONTINUOUS-ACTION CONTROL
Total arice him	Rated speed rpm : 400
FULL LOAD DELIVERY AT FULL LOAD STOP	
<del>}</del>	TORQUE CONTROL
Rated speed rpm : 1100 +	Rated speed rpm : 1100
hPa : 900	rack travel mm : 10.85
Del. quantity +	Tolerance mm : +- 0.05
cm3/1000 strckes : 145.0	Poted aroud mrs - 700
Tolerance + 1.0 +	Rated speed rpm : 700 rack travel mm : 10.00
Check tolerance +	rack travel mm : 10.00 Tolerance mm : +- 0.10
cm3/1000s. : +- 4.0 +	

Rated speed rpm : 900 rack travel mm : 10.35 Tolerance mm : + 0.15	Tolerance : 8.0 Check tolerance
Rated speed rpm : 400 rack travel mm : 9.15 Tolerance mm : + 0.15	- cm3/1000s. : 12.0 - Aneroid pressure - hPa : - Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST	+ Del. quantity + cm3/1000 strokes : 107.0 + Tolerance + cm3/1000 strokes : + 2.0
SETTING	+ Check tolerance + cm3/1000s. : + 4.0
Rated speed rpm : 1100 Pressure hPa : 900 rack travel mm : 10.85 Tolerance mm : + 0.05	BREAKAWAY
MEASUREMENT	+ Rack travel in mm : 9.80 + Rated speed rpm : 1145 + Tolerance 1/min : +- 5
Pressure hPa : - Rated speed rpm : 1100 rack travel mm : 7.70 Tolerance mm : + 0.10	STARTING FUEL DELIVERY
Rated speed rpm : 1100	Rated speed rpm : 100
Pressure hPa : 320 rack travel mm : 8.50 Tolerance mm : + 0.20  Pressure hPa : 560 rack travel mm : 10.25	Del. quantity cm3/1000 strokes : 265.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : +- 19.0
Tolerance mm : + 0.05	<u> </u>
START CUT-OUT	LOW IDLE
Rated speed rpm : > 100 Check speed 1/min : > 80 Rated speed rpm : < 270 Check speed 1/min : < 290	Rated speed rpm : 350 rack travel mm : 5.10 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : + 3.0
FUEL DELIVERY CHARACTERISTICS	theck tolerance cm3/1000s. : + 5.0 spreed
Aneroid pressure hPa : 900 Rated speed rpm : 700	+ Tolerance + cm3/1000 strokes : 7.0 + Check tolerance
Del. quantity cm3/1000 strokes : 150.0	cm3/1000s. : 11.0
Tolerance cm3/1000 strokes : +- 3.0 Check tolerance	<u> </u>
cm3/1000s. : +- 6.0 Spreed	‡

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 21.03.95

Test oil

: ISO 4113

Combination No. : 0402746953

Injection pump

Pump designation : PES6P120A320RS7294

EP type number

: 0412726895

Governor

Governer design.

: RQV275...1000PA1001

: -1

Governer no.

: 0421813936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information

Customer

: RVI

Motor

: MIDR 063540 J/3

Power KW

: 306.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve

: 2417413071

Inlet press. bar

Tolerance bar

: + 0.1

Test nozzle holde

assembly

: 1688901105

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Lube oil

: 1409918004

Test lines

: 1680750089

F15

Outside diameter : 8.0

x inside diameter:

3.0

x length mm

600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

Tolerance mm

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +-1.0

Prestroke mm 4.55

test only : + 0.10

Rack travel in mm: 13.50

Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance

: ← 0.30

: +- 0.05

Check

tolerance °NW

: + - 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

Rated speed rpm

600

1

Rack travel in mm :

Tolerance mm : +- 0.05	+
No.	Rated speed rpm : 393
Del. quantity cm3/1000 strokes : 310.0	f guide sleeve travel mm : 2.99
	+ Tolerance mm : + 0.20
Tolerance	†
cm3/1000 strokes : +- 1.0	+ Rated speed rpm : 490 + guide sleeve
Check tolerance	+ travel mm : 3.81
cm3/1000s. : + 4.0	Tolerance mm : + 0.20
Spreed	Rated speed rpm : 1370
Tolerance	+ guide sleeve
cm3/1000 strokes : 5.0	+ travel mm : 11.50 + Tolerance mm : + 0.50
Check tolerance	Total dice iiiii . +- 0.30
cm3/1000s. : 9.0	
2nd speed rpm : 300	f GUIDE SLEEVE POSITION
End speed (pin : 300	Ţ
Rack travel in mm : -8.60	+ control lever
Tolerance mm : + 0.20 Del. quantity	+ position degree : - 1 + Rated speed rpm : 1185
cm3/1000 strokes : 31.0	t tarea speca (piii : 1705
Tolerance	Rack travel in mm: 12.60
cm3/1000 strokes : +- 2.0 Check tolerance	Tolerance mm : + 1.30
cm3/1000s. : +- 6.0	ļ <del></del>
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+
cm3/1000 strokes : 8.0	+ Rated speed rpm : 600
cm3/1000 strokes : 8.0 Check tolerance	Rated speed rpm : 600 Aneroid pressure
	Aneroid pressure hPa : 1000
Check tolerance	Aneroid pressure  hPa : 1000  Del. quantity
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 310.0 Tolerance
Check tolerance cm3/1000s. : 12.0	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 310.0 Tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : +0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 302.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10  Rated speed rpm : 773	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control Lever
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 302.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10  Rated speed rpm : 773 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  RATED SPEED  rack travel mm : -1.00 Rated speed rpm : 1070
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10  Rated speed rpm : 773 guide sleeve travel mm : 773 guide sleeve travel mm : 6.09 Tolerance mm : + 0.20	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  RATED SPEED  rack travel mm : -1.00
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10  Rated speed rpm : 773 guide sleeve travel mm : 6.09 Tolerance mm : + 0.20  Rated speed rpm : 343 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  RATED SPEED  rack travel mm : -1.00 Rated speed rpm : 1070
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 275 guide sleeve travel mm : 1.29 Tolerance mm : + 0.10  Rated speed rpm : 1086 guide sleeve travel mm : 8.46 Tolerance mm : + 0.10  Rated speed rpm : 773 guide sleeve travel mm : 773 guide sleeve travel mm : 6.09 Tolerance mm : + 0.20  Rated speed rpm : 343	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 310.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED   RATED SPEED   control lever position degree : 302.0 tolerance degree : + 4.0  rack travel mm : -1.00 Rated speed rpm : 1070 Tolerance 1/min : + 5

rack travel mm		+ rack travel mm : -3.80 + Tolerance mm : + 0.20
Tolerance mm	: <del>+</del> 0.55	+
Rated speed rpm	: 1350	+ Pressure hPa : 600
		+ rack travel mm : -0.95
LOW IDLE		Tolerance mm : +- 0.05
control loven		START CUT-OUT
control lever position degree	. 2/4 0	Batad aroad man . 100
tolerance degree		+ Rated speed rpm :> 100 + Check
total alloc acglica	• • • • • • • • • • • • • • • • • • • •	
Testing:		speed 1/min :> 80 Rated speed rpm : < 225
-		Check
Rated speed rpm	: 300	+ speed 1/min : < 245
rack travel mm	: -8.60	+
Tolerance mm	: <del></del> 0.10	
	222	+ FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	• • • • • • • • • • • • • • • • • • • •
CDT mm mov		+ Aneroid pressure
CRT mm max.	: < -7.20	+ hPa : 1000 + Rated speed rpm : 1000
·		+ Del. quantity
CONTINUOUS-ACTION	CONTROL	+ cm3/1000 strokes : 287.0
CONTENDODO ACTION	CONTROL	+ Tolerance
Rated speed rpm	: 370	+ cm3/1000 strokes : + 3.0
marca operation		+ Check tolerance
		+  cm3/1000s. : + 6.0
TORQUE CONTROL		+
		+ Aneroid pressure
Rated speed rpm	: 600	+ hPa : 1000
		+ Rated speed rpm : 500
Rated speed rpm	: 1000	+ Del. quantity
Tolerance mm	: +- 0.10	+ cm3/1000 strokes : 138.0
Rated speed rpm	. 500	+ Tolerance + cm3/1000 strokes : + 5.0
rack travel mm		+ Check tolerance
Tolerance mm		+ cm3/1000s. : + 8.0
TOCCI GITCC IMI	0.10	Spreed
		+ Tolerance
ANEROID/ALTITUDE		+ cm3/1000 strokes : 8.0
COMPENSATOR TEST		+ Check tolerance
		+ cm3/1000s. : 12.0
		+
SETTING		+ Aneroid pressure
~	500	+ hPa : -
Rated speed rpm	: 500	+ Rated speed rpm : 500
Pressure hPa	: 1000	+ Del. quantity + cm3/1000 strokes : 152.0
MEACHDEMENT		+ cm3/1000 strokes : 152.0 + Tolerance
MEASUREMENT		+ cm3/1000 strokes : + 1.0
Pressure hPa	•	+ Check tolerance
Rated speed rpm	: 500	cm3/1000s. : +- 4.0
rack travel mm	: -5.00	1.0
Tolerance mm	: +- 0.20	1
		BREAKAWAY
Rated speed rpm	: 500	+
		<b>†</b>
Pressure hPa	: 240	+ Rack travel in mm : −1.00

Rated speed rpm : 1070
Tolerance 1/min : +- 5

## STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

Check tolerance cm3/1000s.

cm3/1000s. :  $\leftarrow$  14.0

## LOW IDLE

300 Rated speed rpm : -8.60 rack travel mm : + 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 31.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.03.95 Test oil : ISO 4113

Combination No. : 0402746993

Injection pump

Pump designation : PES6P120A720LS7341

EP type number : 0412726913

Governor

Governer design. : RQV350...1150PA1159

Governer no. : 0421814099

Cust. part No. : 0250742302

Customer—spec. information Customer : MTU Motor : 6-R-183 Power KW : 440.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 90 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : '.05
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-2-4-1-5-

: 3

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 10.20 Tolerance mm : + 0.05

	+ Rated speed rpm : 466
Del. quantity	+ guide sleeve
cm3/1000 strokes : 273.0	travel mm : 3.35
	+ Tolerance mm : + 0.25
Tolerance	10,501,011,000 1,001
cm3/1000 strokes : + 1.0	Rated speed rpm : 600
	- guide sleeve
Check tolerance	travel mm : 3.83
cm3/1000s. : +- 4.0	→ Tolerance mm : + 0.25
	+
Spreed	+ Rated speed rpm : 1308
Tolerance	+ guide sleeve
cm3/1000 strokes : 6.0	+ travel mm : 10.00
Charle de Langue	+ Tolerance mm : + 0.25
Check tolerance cm3/1000s. 9.0	Poted aread area . 4/40
cm3/1080s. : 9.0	+ Rated speed rpm : 1410 + guide sleeve
2nd speed rpm : 350	travel mm : 11.50
Erm Speed (pir : 350	+ Tolerance mm : + 0.50
Rack travel in mm : 4.10	Total day of the state of the s
Tolerance mm : +- 0.30	
Del. quantity	+ GUIDE SLEEVE POSITION
cm3/1000 strokes : 17.0	+
Tolerance	+
cm3/1000 strokes : +- 3.0	† control lever
Check tolerance	+ position degree : -1
cm3/1000s. : +- 6.0	+ Rated speed rpm : 1740
Spreed Tolerance	+ Rack travel in mm : 13.00
(	+ Rack travel in mm : 15.00
	<b>X</b>
cm3/1000 strokes : 8.0	Tolerance mm : + 1.30
cm3/1000 strokes : 8.0 Check tolerance	<b>X</b>
cm3/1000 strokes : 8.0	<b>X</b>
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP	Tolerance mm : +- 1.30
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR	Tolerance mm : +- 1.30
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP	Tolerance mm : + 1.30
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: + 0.15	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: + 0.15  Rated speed rpm: 1206	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0
cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 1.53 Tolerance mm : + 0.15  Rated speed rpm : 1206 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance
cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: : 8.35	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0
cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 1.53 Tolerance mm : + 0.15  Rated speed rpm : 1206 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: : 8.35 Tolerance mm: : + 0.20	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000 strokes : 9.0
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: : 8.35 Tolerance mm: : + 0.20  Rated speed rpm: 950	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: : 8.35 Tolerance mm: : + 0.20  Rated speed rpm: 950 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000 strokes : 9.0
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: : 8.35 Tolerance mm: : + 0.20  Rated speed rpm: 950 guide sleeve travel mm: : 5.78	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: : 8.35 Tolerance mm: : + 0.20  Rated speed rpm: 950 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: : 40.15  Rated speed rpm: 1206 guide sleeve travel mm: 8.35 Tolerance mm: : 8.35 Tolerance mm: : 950 guide sleeve travel mm: : 950 guide sleeve travel mm: : 5.78 Tolerance mm: : 5.78 Tolerance mm: : 6.25	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever position degree : 120.0
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: 8.35 Tolerance mm: + 0.20  Rated speed rpm: 950 guide sleeve travel mm: 5.78 Tolerance mm: + 0.25  Rated speed rpm: 416 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  RATED SPEED  control lever position degree : 120.0
Cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 1.53 Tolerance mm : +- 0.15  Rated speed rpm : 1206 guide sleeve travel mm: : 8.35 Tolerance mm : +- 0.20  Rated speed rpm : 950 guide sleeve travel mm : 5.78 Tolerance mm : +- 0.25  Rated speed rpm : 416 guide sleeve travel mm : 2.77	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000s strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : + 4.0  rack travel mm : 13.50
Cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0  (B) SETTING OF INVECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 350 guide sleeve travel mm: 1.53 Tolerance mm: + 0.15  Rated speed rpm: 1206 guide sleeve travel mm: 8.35 Tolerance mm: + 0.20  Rated speed rpm: 950 guide sleeve travel mm: 5.78 Tolerance mm: + 0.25  Rated speed rpm: 416 guide sleeve	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 273.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000 strokes : 9.0  RATED SPEED  control lever position degree : 120.0 tolerance degree : + 4.0

		→         Pressure hPa	: 200
rack travel mm	: 4.00	+ rack travel mm	
Rated speed rpm	: 1300	rack travel mm Tolerance mm	: + 0.05
Tolerance 1/min	: <del>+-</del> 15	+	
		† Pressure hPa	: 400 : 9.10
rack travel <b>mm</b>	: 0.75	+ rack travel mm	: 9.10
Tolerance mm	: <b>←</b> 0.75	Pressure hPa rack travel mm Tolerance mm	: + 0.10
Rated speed rpm	: 1400	+	
		+ Pressure hPa	
		— 🕂 rack travel mm	: 11.70
LOW IDLE		+ Tolerance mm	: +- 0.05
		+	
		Pressure hPa rack travel mm Tolerance mm	: 1700
control lever		+ rack travel mm	: 13.80
position degree	; 65.0	+ Tolerance mm	: +- 0.10
tolerance degree	: <del></del> 4.0	+	
		+	
Testing:		+ START CUT-OUT	
Rated speed rpm	: 350	Rated speed rpm	:> 220
rack travel mm	÷ 4.10	+ Check	, - LLU
rack travel mm Tolerance mm	: <b>+</b> - 0.10	speed 1/min	• > 200
TOTAL GITTE THE		Rated speed rpm	• < 270
Rated speed rpm	• 250	+ Check	. \ 210
veren sheen i hii	. 270	+ speed 1/min	200
CRT mm min.	•> 5.60	T Speed 1/m/11	. \ 290
Ott time ment	. > 3.00		
		→ FUEL DELIVERY CHA	RACTERISTICS
CONTINUOUS-ACTION	N CONTROL	+	
		+ Aneroid pressure	
Rated speed rpm	: 425	+ hPa	: 2000
тасса сресса тр		Rated speed rpm	
		- Del. quantity	
TORQUE CONTROL		+ cm3/1000 strokes	• 3// 0
TORAGE CONTROL		+ Tolerance	. 544.0
Rated speed rpm	• 600	+ cm3/1000 strokes	· <u> </u>
rack travel mm	• 10.20	Check tolerance	
rack travel mm Tolerance mm	. 10.20	- cm3/1000s.	: + 4.5
roterance iimi	: 0.05		: 4.5
Detect assert asse	. 4450	Spreed	
Rated speed rpm	. 1150	+ Tolerance	. 40.0
rack travel mm	: 14.50	- cm3/1000 strokes	: 10.0
Tolerance mm	: <del>+-</del> 0.10	+ Check tolerance	47.5
Markaul P		+ cm3/1000s.	: 14.0
Rated speed rpm		†	
rack travel mm	: 14.50	+ Aneroid pressure	
Tolerance mm	: +- 0.10	+ hPa	: -
		+ Rated speed rpm	: 500
<del></del>	· · · · · · · · · · · · · · · · · · ·	- + Del. quantity	
ANEROID/ALTITUDE		+ cm3/1000 strokes	: 127.0
COMPENSATOR TEST		+ Tolerance	
		+ cm3/1000 strokes	: +- 1.0
		→ Check tolerance	
		+ cm3/1000s.	: <del>+-</del> 4.0
MEASUREMENT		+	
Pressure hPa		BREAKAWAY	
Rated speed rpm	: 600	TONCARAN	
rack travel mm	: 6.20	I	
Tolerance mm		Rack travel in mm	. 17 50
rocerance mm	0.20		
		+ Rated speed rpm	: 1195

Tolerance 1/min : + 5 STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 420.0 Tolerance cm3/1000 strokes :  $\leftarrow$  20.0 Check tolerance cm3/1000s. : + 24.0LOW IDLE Rated speed rpm 350 4.10 rack travel mm Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance 12.0 cm3/1000s.

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.03.95 Test oil : ISO 4113

Combination No. : 0403244045

Injection pump

Pump designation : PES4MW100/720RS1524

EP type number : 0413204021

Governor

Governer design. : RQV300...1300MW132

: -12

Governer no. : 0420083329

Cust. part No. : 0240740902

Customer—spec. information Customer : MB-NFZ Motor : 0M364LA

Power KW : 77.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : + 0.50

Check

tolerance °NW :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.00
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 86.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 3.0

Spreed Tolerance

cm3/1000 strokes : 4.5

Check tolerance		+
cm3/1000s.	: 7.0	+ Rated speed rpm : 1780
		+ guide sleeve
2nd speed rpm	: 300	+ travel mm : 13.50
		+ Tolerance mm : +- 0.50
Rack travel in m	m: 4.40	}
Tolerance mm	: <del></del> 0.20	+
Del. quantity		→ GUIDE SLEEVE POSITION
cm3/1000 strokes	: 12.0	+
Tolerance		+
cm3/1000 strokes	: +- 2.0	+ control lever
Check tolerance		+ position degree : 111
c <b>m3/1000s.</b>	: <del>+-</del> 4.5	+ Rated speed rpm : 1350
Spreed		+
Tolerance		+ Rack travel in mm : 10.00
cm3/1000 strokes	: 2.0	+ Tolerance mm : +- 2.00
Check tolerance		· +
cm3/1000s.	: 4.0	
		+ FULL LOAD DELIVERY AT FULL LOAD STOP
		+
(B) SETTING OF IN	NJECTION PUMP	Rated speed rpm : 1300
WITH GOVERNOR		+ Aneroid pressure
		+ hPa : 700
		- 🕂 Del. quantity
GUIDE SLEEVE TRAN	/EL	+ cm3/1000 strokes : 86.0
		+ Tolerance
Rated speed rpm	: 300	+ cm3/1000 strokes : + 1.0
guide sleeve		+ Check tolerance
travel mm	: 0.91	+ cm3/1000s. : + 3.0
Tolerance mm	: +- 0.25	Spreed
		+ Tolerance
Rated speed rpm	: 1353	+ cm3/1000 strokes : 4.5
guide sleeve		+ Check tolerance
travel mm	: 7.14	+ cm3/1000s. : 7.0
Toterance mm	: + 0.25	+
Rated speed rpm	: 1130	+ RATED SPEED
guide sleeve		+
travel mm	: 5.40	<del>}</del>
Tolerance mm	: + 0.25	+ control lever
		position degree : 110.0
Rated speed rpm	: 610	+ tolerance degree : +- 4.0
guide sleeve		+
travel mm	: 2.96	+ rack travel mm : 10.00
Tolerance mm	: <del>+</del> 0.25	+ Rated speed rpm : 1345
		+ Tolerance 1/min : + 5
Rated speed rpm	: 660	+
guide sleeve		+ rack travel mm : 4.00
travel mm	: 3.31	+ Rated speed rpm : 1435
Tolerance mm	: +- 0.25	+ Tolerance 1/min : + 15
		+
Rated speed rpm	: 780	rack travel mm : 0.50
guide sleeve		+ Tolerance mm : + 0.50
travel mm	: 3.72	+ Rated speed rpm : 1550
Tolerance mm	: +- 0.25	+
		+
Rated speed rpm	: 1679	+ LOW IDLE
guide sleeve		+
travel mm	: 12.00	+
Tolerance mm	: +- 0.25	+
		•

control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm	: +- 4.0 : 300 : 4.40 : +- 0.10 : 200	Aneroid pressure hPa : 700 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 11.00 : + 0.05 : 750 : 11.00	Aneroid pressure  hPa : - Rated speed rpm : 500  Del. quantity cm3/1000 strokes : 71.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0
ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm	: 500	BREAKAWAY  Rack travel in mm: 10.00  Rated speed rpm: 1345  Tolerance 1/min: + 5
Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm Tolerance mm  Rated speed rpm	: - : 500 : +- 0.10	STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0
START CUT-OUT  Rated speed rpm Check speed 1/min Rated speed rpm Check speed 1/min  FUEL DELIVERY CHAR	: > 100 : > 80 : < 200 : < 220	LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.40 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed

Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.03.95 Test oil : ISO 4113

Combination No. : 0403246047

Injection pump

Pump designation : PES6MW100/720RS1522

EP type number : 0413206023

Governor

Governer design. : RQV300...1300MW148

: -4

Governer no. : 0420083325

Cust. part No. : 0250744802

Customer-spec. information Customer : MB-NFZ Motor : 0M36614

Motor : 0M366LA Power KW : 155.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance ber : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 : +- 0.50

Check

Tolerance

tolerance  $^{\circ}NW$  : + 0.75

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 118.0

-----

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance	+ guide sleeve
cm3/1000 strokes : 4.5	† travel mm : 13.50
	_ + Tolerance mm : +- 0.50
Check tolerance	+
cm3/1000s. : 7.0	
	+ GUIDE SLEEVE POSITION
2nd speed rpm : 300	+
	+ Rated speed rpm : 1500
Rack travel in mm : 4.20	<del> </del>
Tolerance mm : + 0.20	+ Rack travel in mm: 10.00
Del. quantity	+ Tolerance mm : + 2.50
cm3/1000 strokes : 12.0	1
Tolerance	
cm3/1000 strokes : +- 2.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	
cm3/1000s. : +- 4.5	+ Rated speed rpm : 1300
Spreed	+ Aneroid pressure
Tolerance	+ hPa : 1200
cm3/1000 strokes : 2.0	Del. quantity
Check tolerance	+ cm3/1000 strokes : 118.0
cm3/1000s. : 4.0	+ Tolerance
CIID/ 10000: 4.0	- cm3/1000 strokes : +- 1.0
	Check tolerance
(B) SETTING OF INJECTION PUMP	- cm3/1000s. : +- 3.0
WITH GOVERNOR	
MILLI GONEKINOK	+ Spreed
	+ Tolerance
CUIDE OF EDUE IDANE	+ cm3/1000 strokes : 4.5
GUIDE SLEEVE TRAVEL	+ Check tolerance
700	+ cm3/1000s. : 7.0
Rated speed rpm : 300	†
guide sleeve	
travel mm : 0.92	+ RATED SPEED
Tolerance mm : + 0.25	†
	+
Rated speed rpm : 1355	+ control lever
guide sleeve	† position degree : 120.0
travel mm : 9.32	+ tolerance degree : +- 4.0
Tolerance mm : + 0.25	+
	+ rack travel mm : 12.30
Rated speed rpm : 1078	+ Rated speed rpm : 1345
guide sleeve	+ Tolerance 1/min : +- 5
travel mm : 7.06	+
Tolerance mm : + 0.25	+ rack travel mm : 4.00
	+ Rated speed rpm : 1485
Rated speed rpm : 514	+ Tolerance 1/min : + 15
guide sleeve	4
travel mm : 2.14	† rack travel mm : 0.50
Tolerance mm : + 0.25	+ Tolerance mm : + 0.50
TO COT UTION THAT	Rated speed rpm : 1600
Rated speed rpm : 564	1 1/4104 00004 10111 1 1000
guide sleeve	1
travel mm : 2.60	+ LOW IDLE
Tolerance mm : + 0.25	1
10 CC1 G110 6 1 0.CJ	1
Rated speed rpm : 740	T control lever
	1
guide sleeve	+ position degree : 74.0
travel mm : 3.93	tolerance degree : +- 4.0
Tolerance mm : +- 0.25	Tanking.
Data dana dana da 4700	† Testing:
Rated speed rpm : 1720	†

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min.	: 4.20 : + 0.10 : 200	Aneroid pressure  hPa : 1200  Rated speed rpm : 750  Del. quantity  cm3/1000 strokes : 114.0  Tolerance  cm3/1000 strokes : + 1.5  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 6.0
TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm		- cneck tolerance - cm3/1000s. : 9.0
rack travel mm Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST	: 13.30 : + 0.10	Aneroid pressure  hPa : -  Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 48.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 3.0
SETTING	500	<del></del>
Rated speed rpm Pressure hPa rack travel mm Tolerance mm		BREAKAWAY  Rack travel in mm: 12.30 Rated speed rpm: 1345 Tolerance 1/min: +- 5
Pressure hPa Rated speed rpm Tolerance mm	500 + 0.10	STARTING FUEL DELIVERY
Rated speed rpm Pressure hPa rack travel mm		Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 150.0  Tolerance
Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: +- 0.10 : 300 : 1.20 : +- 0.10	cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0
START CUT-OUT		LOW IDLE
Rated speed rpm Check speed 1/min Rated speed rpm Check speed 1/min	: > 100 : > 80 : < 200 : < 220	Rated speed rpm : 300 rack travel mm : 4.20 Tolerance mm : +- 0.20 bel. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	cm3/1000s. : + 4.5 + Spreed

Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : 2.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.03.95 : ISO 4113 Test oil

Combination No. : 0403444112

Injection pump

Pump designation : PES4MW100/720RS1127

EP type number : 0413404103

Governor

Governer design. : RQV300...1300MW48-2

Governer no. : 0420083110

Cust. part No.

Customer-spec. information Customer : MB-NFZ : OM 364 A Motor Power KW : 85.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde

: 1688901101 assembly

Opening pressure

208.5 Tolerance bar ; +- 1.5

: 1680750089 Test lines

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 3.75 Tolerance mm : + - 0.05

test only : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

11.15 Rack travel in mm: Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 81.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +-3.0

Spreed

Tolerance

cm3/1000 strokes :

Check tolerance +	
cm3/1000s. : 6.0	rack travel mm : 10.10
t	Rated speed rpm : 1345
2nd speed rpm : 300	Tolerance 1/min : + 5
Dook droved in my a 7.05	made Americal and 1 (100)
Rack travel in mm: 7.85 + Tolerance mm: + 0.20 +	rack travel mm : 4.00 Rated speed rpm : 1445
Del. quantity	Rated speed rpm : 1445 Tolerance 1/min : +- 15
cm3/1000 strokes : 11.0	Total ance Triming . F- (5
Tolerance	rack travel mm : 0.50
cm3/1000 strokes : + 2.0	Tolerance mm : + 0.50
Check tolerance +	Rated speed rpm : 1550
cm3/1000s. : + 4.5 +	
Spreed	
Tolerance + cm3/1000 strokes : 3.5 +	LOW IDLE
Check tolerance	
cm3/1000s. : 5.5	control lever
T	position degree : 86.0
1	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	Testing:
+	
†	Rated speed rpm : 300
CHIEF OF COLUMN	rack travel mm : 7.85 Tolerance mm : +- 0.05
GUIDE SLEEVE POSITION	Tolerance mm : + 0.05
I	Rated speed rpm : 100
control lever	nated speed ipin . 100
position degree : -1	CRT mm min. :> 9.50
Rated speed rpm : 1330	
+	
Rack travel in mm: 16.50 +	CONTINUOUS-ACTION CONTROL
Tolerance mm : + 1.30 +	Dated around now . //F
<u> </u>	Rated speed rpm : 465
FULL LOAD DELIVERY AT FULL LOAD STOP	
1	TORQUE CONTROL
Rated speed rpm : 1300	
Aneroid pressure +	Rated speed rpm : 1300
hPa : - +	rack travel mm : 11.15
Del. quantity	Tolerance mm : $\leftarrow$ 0.05
cm3/1000 strokes : 81.0 +	Rated speed rpm : 750
cm3/1000 strokes : + 1.0	Rated speed rpm : 750 rack travel mm : 11.95
Check tolerance	Tolerance mm : +- 0.10
cm3/1000s. : + 3.0	
Spreed	Rated speed rpm : 585
Tolerance	rack travel mm : 12.20
cm3/1000 strokes : 3.5	Tolerance mm : +- 0.10
Check tolerance	Data di anno di mana
cm3/1000s. : 6.0	Rated speed rpm : 1000
<u> </u>	rack travel mm : 11.20 Tolerance mm : +- 0.10
RATED SPEED	TO CEI QUECE IIMI
TOTAL OF THE PARTY	
↓	
control lever	START CUT-OUT
position degree : 120.0	
tolerance degree : + 4.0 +	Rated speed rpm :> 100

Check speed 1/min Rated speed rpm Check speed 1/min	: > 80 : < 230 : < 250
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: - : 750 : 77.0 : + 1.5 : + 4.0
Check tolerance cm3/1000s.	: 7.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 585 : 72.0 : + 1.5 : + 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 10.10 : 1345 : +- 5
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 83.0
LOW IDLE	
Rated speed rpm	: 300

rack travel mm	:	7.85
Tolerance mm	: +-	0.20
Del. quantity		
cm3/1000 strokes	:	11.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

Combination No. : 0403474022

Injection pump

Pump designation : PES4MW100/720RS1151

EP type number : 0413404104

Governor

Governer design. : RSV350...1300MW0A329

: -12

Governer no. : 0420085189

Cust. part No.

Customer-spec. information Customer : MB-NFZ

Motor : 0M364A Power KW : 79.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Test hydr. locking device for starting with 500...1000 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance : + 0.50

Check : + U

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 10.95 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 81.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

	Charle talanana
Spreed	+ Check tolerance + cm3/1000s. : 6.0
Tolerance	+
cm3/1000 strokes : 3.5	DATES OPERS
Check tolerance	RATED SPEED
cm3/1000s. : 6.0	$\frac{1}{4}$
	+ control lever
2nd speed rpm : 350	position degree : 99.0
Rack travel in mm : > 6.40	tolerance degree : +- 4.0
Tolerance mm : +- 0.40	rack travel mm : 1.00
Del. quantity	Tolerance mm : + 0.70
cm3/1000 strokes : 12.0 Tolerance	+ Rated speed rpm : 1550
cm3/1000 strokes : +- 2.0	
Check tolerance	+ LOW IDLE
cm3/1000s. : +- 4.5	+
Spreed Tolerance	† Testing:
cm3/1000 strokes : 3.5	Rated speed rpm : 350
Check tolerance	rack travel mm : 6.40
cm3/1000s. : 5.5	† Tolerance mm : + 0.40
	rack travel mm : 2.00
(B) SETTING OF INJECTION PUMP	T rack travec iniii . 2.00
WITH GOVERNOR	+ Rated speed rpm : ^^O
	† CDT: > 10.00
	+ CRT mm min. : > 19.00
GUIDE SLEEVE POSITION	
	+ TORQUE CONTROL
control lever	+ Rated speed rpm : 1280
position degree : - 3	rack travel mm : 10.95
Rated speed rpm : 800	Tolerance mm : + 0.05
Book Americal dia manage 0.75	Patril arrad array (00)
Rack travel in mm : 0.65 Tolerance mm : + 0.35	+ Rated speed rpm : 600 + rack travel mm : 11.85
Total differ train	+ Tolerance mm : +- 0.10
governor spring	<del>}</del>
pre-tension (20)	+ Rated speed rpm : 1000
click setting x : 6.00	+ rack travel mm : 11.80 + Tolerance mm : + 0.10
	+ Cotte and the man
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1175
Dated and man 1200	+ rack travel mm : 11.15
Rated speed rpm : 1280 Aneroid pressure	+ Tolerance mm : +- 0.15
hPa : 700	
Del. quantity	+ ANEROID/ALTITUDE
cm3/1000 strokes : 81.0 Tolerance	† COMPENSATOR TEST
cm3/1000 strokes : +- 1.0	Ţ
Check tolerance	SETTING
cm3/1000s. : +- 3.0	T Dated aread === 500
Spreed Tolerance	+ Rated speed rpm : 500 + Pressure hPa : 700
cm3/1000 strokes : 3.5	+ rack travel mm : 11.85
	+ Tolerance mm : + 0.10

### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 300 rack travel mm : 11.30 Tolerance mm : + 0.15

Pressure hPa : 200 rack travel mm : 10.80 Tolerance mm : + 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 700
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 77.0
Tolerance
cm3/1000 strokes : +- 1.5
Check tolerance
cm3/1000s. : +- 4.0
Spreed
Tolerance

cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 7.0

Aneroid pressure
hPa :
Rated speed rpm :
Del. quantity

cm3/1000 strokes : 46.0 Tolerance cm3/1000 strokes : +- 1.0

500

cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 83.0
Telerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000s. : + 8.0

## LOW IDLE

Rated speed (Sm	:	350
rack travel mm	: >	6.40
Tolerance mm	: +-	0.40
Del. quantity		
cm3/1000 strokes	•	12.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.03.95 Test oil : ISO 4113

Combination No. : 0400866159

Injection pump

Pump designation : PES6A85D410/3RS2761

EP type number : 0410886895

Governor

Governer design. : RSV325...1400A2C2245

: L

Governer no. : 0420232537

Cust. part No. :

Customer-spec. information

Customer : KHD

Motor : BF6L913T

Power KW : 85.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0681343009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

test only : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.45
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance	+
cm3/1000 strokes : 3.0	RATED SPEED
Check tolerance	+ RATED SPEED
cm3/1000s. : 7.0	†
2nd speed rpm : 325	the control lever position degree : 99.0
Rack travel in mm : 8.00	tolerance degree : +- 4.0
Tolerance mm : +- 0.10	rack travel mm : 9.45
Del. quantity cm3/1000 strokes : 16.0	+ Rated speed rpm : 1245 + Tolerance 1/min : +- 5
Tolerance	+
cm3/1000 strokes : +- 3.0 Check tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 1280
cm3/1000s. : +- 5.0	Tolerance 1/min : + 15
Spreed Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 4.5	+ Tolerance mm   : ← 0.55
Check tolerance cm3/1000s. : 7.5	† Rated speed rpm : 1445
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1315
WITH GOVERNOR	
	+ LOW IDLE
CUIDE OF FOUR DOCUTION	+
GUIDE SLEEVE POSITION	<pre>control lever position degree : 68.0</pre>
control lever	tolerance degree : +- 4.0
position degree : - 3	Setting point w/out bumper spring
Rated speed rpm : 800	+
Rack travel in mm : 0.50	+ Rated speed rpm : 325 + rack travel mm : 7.50
Tolerance mm : + 0.20	+ + Testing:
governor spring	+
pre-tension click setting x : 3.30	+ Rated speed rpm : 325 + rack travel mm : 8.00
ctick secting x . 5.50	T lack clavec limit . 0.00
	+ Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+
FULL LOAD DELIVERY AT FULL LOAD STOP	+ rack travel mm : 2.00 + Rated speed rpm : 490
Rated speed rpm : 1200	+ rack travel mm : 2.00
Rated speed rpm : 1200 Aneroid pressure hPa : -	+ rack travel mm : 2.00 + Rated speed rpm : 490
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30 Rated speed rpm : 100
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 70.0 Tolerance	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : +- 30 Rated speed rpm : 100
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 70.0	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30 Rated speed rpm : 100
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.50  TORQUE CONTROL
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : +- 30  Rated speed rpm : 100  CRT mm min. : > 19.50
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 1200
Rated speed rpm : 1200 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance	rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.50  TORQUE CONTROL  Rated speed rpm : 1200 rack travel mm : 10.45

Tolerance mm	: <del>+</del> 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 11.00 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 975 : 10.80 : ← 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 58.0
Tolerance cm3/1000 strokes	: +- 1.5
Check tolerance cm3/1000s.	: +- 3.5
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 800 : 65.0 : + 1.5 : + 3.5
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 9.45 : 1245 : +- 5
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 100 : 15.20 : + 0.20 : 95.0 : + 7.5
Check tolerance cm3/1000s.	: +- 10.0

# LOW IDLE

Rated speed rpm	:		325
rack travel mm	:		8.00
Tolerance mm	:	+-	0.10
Del. quantity			
cm3/1000 strokes	:		16.0
Tolerance			
cm3/1000 strokes	:	+	3.0
Check tolerance			
cm3/1000s.	:	+-	5.0
Spreed			
Tolerance			
cm3/1000 strokes	:		4.5
Check tolerance			
cm3/1000s.	:		7.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.03.95 Test oil : ISO 4113

Combination No. : 0401848828

Injection pump

Pump designation : PE8P120A520/4LS3850

EP type number : 0411828723

Governor

Governer design. : RQ300/900PA1230

Governer no. : 0421801792

Cust. part No. :

Customer-spec. information Customer : DAEWOO

: D2848LE Motor

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 : +- 1.5 Tolerance bar

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05

test only : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

: + 0.30Tolerance

Check

tolerance °NW : +- 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm: 11.90 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 208.0

- 1		1
Tolerance	. 40	†
cm3/1000 strokes	i : +- 1.0	+ Rated speed rpm : 1050
		+ guide sleeve
Check tolerance		† travel mm : 11.50
cm3/1000s.	: <del></del> 4.0	+ Tolerance mm : + 0.50
		+
Spreed		
Tolerance		+ GUIDE SLEEVE POSITION
cm3/1000 strokes	6.0	+
		+ Rated speed rpm : 600
Check tolerance		+
cm3/1000s.	: 10.0	+ Rack travel in mm : 20.00
		+ Tolerance mm : + 0.80
2nd speed rpm	: 300	+
Rack travel in m		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm	: +- 0.30	+
Del. quantity		+ Rated speed rpm : 850
cm3/1000 strokes	: 24.0	+ Aneroid pressure
Tolerance		+ hPa : -
cm3/1000 strokes	: <del></del> 3.0	+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 208.0
cm3/1000s.	: +- 6.0	+ Tolerance
Spreed		+ cm3/1000 strokes : +- 1.0
Tolerance		+ Check tolerance
cm3/1000 strokes	: 6.0	+ cm3/1000s. : +- 4.0
Check tolerance		+ Spreed
cm3/1000s.	: 10.0	+ Tolerance
		+ cm3/1000 strokes : 6.0
		+ Check tolerance
(B) SETTING OF I	NJECTION PUMP	+ cm3/1000s. : 10.0
		,
WITH GOVERNOR		+
WITH GOVERNOR		<u> </u>
		RATED SPEED
WITH GOVERNOR  GUIDE SLEEVE TRAY		<u> </u>
GUIDE SLEEVE TRA	VEL	RATED SPEED
GUIDE SLEEVE TRAN	VEL	RATED SPEED  control lever
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve	VEL : 300	RATED SPEED  control lever position degree : 31.0
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm	VEL: 300:: 1.44	RATED SPEED  control lever
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve	VEL : 300	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm	VEL : 300 : 1.44 : + 0.10	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	VEL : 300 : 1.44 : + 0.10	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	VEL  : 300  : 1.44  : + 0.10  : 932	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	VEL  : 300  : 1.44  : + 0.10  : 932  : 6.37	RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	VEL  : 300  : 1.44  : + 0.10  : 932	RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0  rack travel mm : 10.90
GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932 : 6.37 : + 0.10	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm Rated speed rpm	VEL  : 300  : 1.44  : + 0.10  : 932  : 6.37	RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0  rack travel mm : 10.90
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	YEL  : 300  : 1.44  : + 0.10  : 932  : 6.37  : + 0.10  : 880  : 6.00	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 6.00 : + 0.10	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAY  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	YEL  : 300  : 1.44  : + 0.10  : 932  : 6.37  : + 0.10  : 880  : 6.00	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15
GUIDE SLEEVE TRAY  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 433	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15  rack travel mm : 0.50
GUIDE SLEEVE TRAY  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : + 0.10  : 433  : 4.94	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : 0.50
GUIDE SLEEVE TRAY  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 433	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15  rack travel mm : 0.50
GUIDE SLEEVE TRAY Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	VEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 433  : 4.94 : + 0.10	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : 0.50
GUIDE SLEEVE TRAY  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	VEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 433  : 4.94 : + 0.10	RATED SPEED  control lever position degree : 4.0 tolerance degree : + 4.0 control lever position degree : 93.0 tolerance degree : + 4.0 rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1100
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 40.10  : 433  : 4.94 : + 0.10  : 510	RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : 0.50
GUIDE SLEEVE TRAY  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 6.00 : + 0.10  : 433  : 4.94 : + 0.10  : 510  : 6.00	RATED SPEED  control lever position degree : 4.0 tolerance degree : + 4.0 control lever position degree : 93.0 tolerance degree : + 4.0 rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1100
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	YEL  : 300  : 1.44 : + 0.10  : 932  : 6.37 : + 0.10  : 880  : 40.10  : 433  : 4.94 : + 0.10  : 510	RATED SPEED  control lever position degree : 4.0 tolerance degree : + 4.0 control lever position degree : 93.0 tolerance degree : + 4.0 rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : + 15 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1100

control lever position degree tolerance degree	: 75.0 : + 4.0
control lever position degree tolerance degree	: 13.0 : ← 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 7.40 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 425 : ← 20
Rated speed rpm	: 200
CRT mm min.	: > 9.80
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 850 : 11.90 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 650 : 11.90 : + 0.05
START CUT-OUT	
Rated speed rpm Check	: > 100
speed 1/min Rated speed rpm	: > 80 : < 220
Check speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
Rated speed rpm Del. quantity	: 650
cm3/1000 strokes Tolerance	: 212.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: +- 6.0
BREAKAWAY	

Rack travel in mm	:		10.90
Rated speed rpm	:		925
Tolerance 1/min	:	+-	5

# STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes	:	160.0
Tolerance cm3/1000 strokes	: +-	- 20.0
Check tolerance cm3/1000s.	: +-	- 24.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm Del. quantity	: +-	300 6.80 0.30
cm3/1000 strokes	:	24.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.		6.0
Spreed	: +-	0.0
Tolerance cm3/1000 strokes Check tolerance	:	6.0
cm3/1000s.	:	10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.03.95 Test oil : ISO 4113

Combination No. : 0401849757

Injection pump

Pump designation : PE10P120A520/4LS3863

EP type number : 0411897711

Governor

Governer design. : RQ300/900PA1230

Governer no. : 0421801792

Cust. part No. :

Customer-spec. information Customer : DAEWOO : D2840LE Motor

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5 : + 0.1 Tolerance bar

Test nozzle holde

assembly : 1688901105

Opening pressure

208.5 Tolerance bar : +- 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05 : +- 0.05 Tolerance mm

test only : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 10- 9- 4- 1- 8 : - 7- 6- 3- 5 : - 2

Phasing : 0-45-72-117-144

: -189-216-261-288

: -333

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.90

Tolerance mm :  $\leftarrow$  0.05

Del. quantity	+	guide sleeve
cm3/1000 strokes	· 208.0	travel mm : 6.00
CIIDY TOOD SET ONES	· 200.0	
		Tolerance mm : + 0.10
Tolerance	+	
cm3/1000 strokes	: ← 1.0 +	Rated speed rpm : 1050
	1	guide sleeve
Chaple tal anomas	<del></del> T	
Check tolerance		travel mm : 11.50
cm3/1000s.	: <del>+- 4.0 +</del>	Tolerance mm : +- 0.50
	+	
Spreed	1	
Tolerance		GUIDE SLEEVE POSITION
	T	GOIDE SPEECE LOSTITON
cm3/1000 strokes	: 6.0	
	+	Rated speed rpm : 600
Check tolerance	1	, ,
	: 10.0	Rack travel in mm : 20.00
CIID7 10003.	· 10.0	
	†	Tolerance mm : + 0.80
2nd speed rpm	: 300 +	
	1	
Rack travel in mm	: 6.80	FULL LOAD DELIVERY AT FULL LOAD STOP
		TOLL LOAD DELIVERY AT FOLL LOAD STOP
	: + 0.30 +	
Del. quantity	+	Rated speed rpm : 850
cm3/1000 strokes	: 24.0 <del>↓</del>	Aneroid pressure
Tolerance	1	hPa : -
	: + 3.0 I	
cm3/1000 strokes	; <del>-</del> 3.0 †	Del. quantity
Check tolerance	+	cm3/1000 strokes : 208.0
cm3/1000s.	: ← 6.0 <del> </del>	Tolerance
Spreed	1	cm3/1000 strokes : +- 1.0
	T	
Tolerance		Check tolerance
cm3/1000 strokes	: 7.0 +	cm3/1000s. : + 4.0
Check tolerance	+	Spreed
	: 11.0	Tolerance
CIID/ 10000.		
	<b>†</b>	cm3/1000 strokes : 6.0
	_ <u>+</u> _	Check tolerance
	T	
(B) SETTING OF INJE	ECTION PUMP	
	ECTION PUMP	cm3/1000s. : 10.0
(B) SETTING OF INJE	ECTION PUMP	
	ECTION PUMP	cm3/1000s. : 10.0
WITH GOVERNOR		
		cm3/1000s. : 10.0
WITH GOVERNOR		cm3/1000s. : 10.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL		cm3/1000s. : 10.0  RATED SPEED
GUIDE SLEEVE TRAVEL		cm3/1000s. : 10.0  RATED SPEED  control lever
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve	300	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0
GUIDE SLEEVE TRAVEL	300	cm3/1000s. : 10.0  RATED SPEED  control lever
GUIDE SLEEVE TRAVEL Rated speed rpm : guide sleeve travel mm :	300	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve travel mm	300	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm	300 + 1.44 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : 4.0 control lever
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm:	300	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	300 1.44 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : 4.0 control lever
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm:	300 + 1.44 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm:	300 1.44 + 0.10 932 6.37	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	300 1.44 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm : Tolerance mm :	300 1.44 + 0.10 932 6.37 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0   control lever position degree : 93.0 tolerance degree : +- 4.0   rack travel mm : 10.90 Rated speed rpm : 925
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm Rated speed rpm :	300 1.44 + 0.10 932 6.37	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm : Tolerance mm :	300 1.44 + 0.10 932 6.37 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0   control lever position degree : 93.0 tolerance degree : +- 4.0   rack travel mm : 10.90 Rated speed rpm : 925
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	300 1.44 + 0.10 932 6.37 + 0.10 880	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 4.0  control lever position degree : + 4.0  control lever position degree : 93.0  tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 + 0.10 932 6.37 + 0.10 880 6.00	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm: Rated speed rpm guide sleeve travel mm Tolerance mm:	300 1.44 + 0.10 932 6.37 + 0.10 880	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 965
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm: Rated speed rpm guide sleeve travel mm Tolerance mm: Colerance mm: Coler	300 1.44 + 0.10 932 6.37 + 0.10 880 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : + 4.0  control lever position degree : 93.0 tolerance degree : + 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAVEL Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 + 0.10 932 6.37 + 0.10 880 6.00	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : +- 15
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm  Rated speed rpm guide sleeve travel mm  Rated speed rpm  Rated speed rpm : Rated speed rpm : Rated speed rpm	300 1.44 + 0.10 932 6.37 + 0.10 880 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : +- 15
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 0.10 932 6.37 + 0.10 880 + 0.10 433	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : +- 15  rack travel mm : 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 + 0.10 932 6.37 + 0.10 880 + 0.10 433 4.94	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 4.0  control lever position degree : 93.0  tolerance degree : 4.0  rack travel mm : 10.90  Rated speed rpm : 925  Tolerance 1/min : + 5  rack travel mm : 4.00  Rated speed rpm : 965  Tolerance 1/min : + 15  rack travel mm : 0.50  Tolerance mm : 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 0.10 932 6.37 + 0.10 880 + 0.10 433	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 31.0 tolerance degree : +- 4.0  control lever position degree : 93.0 tolerance degree : +- 4.0  rack travel mm : 10.90 Rated speed rpm : 925 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 965 Tolerance 1/min : +- 15  rack travel mm : 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 + 0.10 932 6.37 + 0.10 880 + 0.10 433 4.94 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 4.0  control lever position degree : 93.0  tolerance degree : 4.0  rack travel mm : 10.90  Rated speed rpm : 925  Tolerance 1/min : + 5  rack travel mm : 4.00  Rated speed rpm : 965  Tolerance 1/min : + 15  rack travel mm : 0.50  Tolerance mm : 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	300 1.44 + 0.10 932 6.37 + 0.10 880 + 0.10 433 + 0.10	cm3/1000s. : 10.0  RATED SPEED  control lever position degree : 4.0  control lever position degree : 93.0  tolerance degree : + 4.0  rack travel mm : 10.90  Rated speed rpm : 925  Tolerance 1/min : + 5  rack travel mm : 4.00  Rated speed rpm : 965  Tolerance 1/min : + 15  rack travel mm : 0.50  Tolerance mm : 0.50

# LOW IDLE

control lever position degree : 75.0 tolerance degree : +- 4.0

control lever

position degree : 13.0 tolerance degree : + 4.0

## Testing:

Rated speed rpm : 300 rack travel mm : 7.40 Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 9.80

## TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 11.90 Tolerance mm : + 0.05

Rated speed rpm : 650 rack travel mm : 11.90 Tolerance mm : +0.05

## START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 650
Del. quantity

cm3/1000 strokes : 212.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +-

6.0

### BREAKAWAY

Rack travel in mm: 10.90
Rated speed rpm: 925
Tolerance 1/min: +- 5

#### STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  24.0

# LOW IDLE

o00 Rated speed rpm 6.80 rack travel mm Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 24.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s.11.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.03.95 : ISO 4113

Combination No. : 0402646603

Injection pump

Pump designation : PE6P12OA72ORS7022

EP type number : 0412626873

Governor

Governer design. : RQV200...1000PA539

: -15

Governer no.

: 0421814013

Cust. part No. : 1340658

Customer-spec. information : SCANIA Customer

Motor

: DS11 75

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar :

Tolerance bar

Tolerance l/h

: +- 10.0

Test nozzle holde

assembly

: 1688901104

Opening pressure

251.5

Tolerance bar

: +- 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm :

600

REMARKS

Start-of-delivery setting with ROBO

diaphragm.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : **←** 7.05

test only : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

: **←** 0.30 Tolerance

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.15

Tolerance mm : ← 0.05

Del. quantity tm3/1000 strokes : 209.0	Spreed Tolerance
Tolerance	cm3/1000 strokes : 8.0 Check tolerance
cm3/1000 strokes : +- 1.0	cm3/1000s. : 12.0
Check tolerance cm3/1000s. : +- 4.0	RATED SPEED
Spreed Tolerance cm3/1000 strokes : 8.0	control lever position degree : 64.0 tolerance degree : + 4.0
Check tolerance cm3/1000s. : 12.0	control lever position degree : 116.0
2nd speed rpm : 250	tolerance degree : + 4.0
Rack travel in mm: 4.70 Tolerance mm: + 0.30 Del. quantity cm3/1000 strokes: 17.0	rack travel mm : 11.10 Rated speed rpm : 1045 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0	rack travel mm : 4.00 Rated speed rpm : 1140 Tolerance 1/min : + 15
Spreed Tolerance cm3/1000 strokes : 4.0 check tolerance	rack travel mm : 7.50 Tolerance mm : +- 0.50 Rated speed rpm : 1250
cm3/1000s. : 8.0	LOW IDLE
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR	position degree : 67.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	position degree : 67.0
GUIDE SLEEVE POSITION  control lever position degree : -1 Rated speed rpm : 1050	position degree : 67.0 tolerance degree : + 4.0 control lever position degree : 23.0 tolerance degree : + 4.0 Testing:  Rated speed rpm : 250
GUIDE SLEEVE POSITION  control lever position degree : -1	position degree : 67.0 tolerance degree : + 4.0 control lever position degree : 23.0 tolerance degree : + 4.0 Testing:
GUIDE SLEEVE POSITION  control lever position degree : -1 Rated speed rpm : 1050  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 67.0 tolerance degree : + 4.0  control lever position degree : 23.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.70
GUIDE SLEEVE POSITION  control lever position degree : -1 Rated speed rpm : 1050  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure	position degree : 67.0 tolerance degree : + 4.0 control lever position degree : 23.0 tolerance degree : + 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.70 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 400
GUIDE SLEEVE POSITION  control lever position degree : - 1 Rated speed rpm : 1050  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 209.0	position degree : 67.0 tolerance degree : + 4.0 control lever position degree : 23.0 tolerance degree : + 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.70 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30
GUIDE SLEEVE POSITION  control lever position degree : -1 Rated speed rpm : 1050  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : 1500 Del. quantity	position degree : 67.0 tolerance degree : + 4.0 control lever position degree : 23.0 tolerance degree : + 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.70 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30 Rated speed rpm : 150

rack travel mm Tolerance mm	: 12.15 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.15 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 390 : 10.60 : ← 0.15
Pressure hPa rack travel mm Tolerance mm	: 590 : 11.65 : +- 0.05
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 1500 : 1000
Del. quantity cm3/1000 strokes	: 198.0
Tolerance cm3/1000 strokes	: +- 4.0
Check tolerance cm3/1000S.	: +- 6.0
Aneroid pressure hPa	
Rated speed rpm	: - : 500
Del. quantity cm3/1000 strokes	: 144.0
Tolerance	
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 1045

rack travel mm Tolerance mm	: : +-	10.10
Del. quantity cm3/1000 strokes	:	160.0
Tolerance cm3/1000 strokes	: +-	20.0
Check tolerance cm3/1000s.	: +-	24.0

# LOW IDLE

Rated speed rpm	:	250
rack travel mm	:	4.70
Tolerance mm	: +-	0.30
Del. quantity		
cm3/1000 strokes	:	17.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		_
cm3/1000s.	:	8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 09.03.95 Edition : ISO 4113 Test oil

Combination No. : 0402646609

Injection pump

Pump designation : PE6P12OA72ORS7188

: -10

EP type number : 0412626924

Governor

Governer design. : RQV200...950PA725

: -11

: 0421814033 Governer no.

Cust. part No. : 1340418

Customer-spec. information Customer : SCANIA

: DSC 11 36 Motor

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : Tolerance bar

Overflow quantity

min. L/h Tolerance l/h : +- 20.0

Test nozzle holde

: 1688901104 assembly

Opening pressure

251.5 bar : +- 1.5 Tolerance bar

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

REMARKS

Start-of-delivery setting with ROBO

diaphragm.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm Tolerance mm : 4.45 : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance \*NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. :

BASIC SETTING

700 Rated speed rpm :

•	<b>-</b> .
Rack travel in mm: 13.85	Tolerance cm3/1000 strokes : +- 1.0
Tolerance mm : + 0.05	Check tolerance
- Octor direct min	cm3/1000s. : +- 4.0
Del. quantity	Spreed
cm3/1000 strokes : 252.0	Tolerance
	cm3/1000 strokes : 8.0
Tolerance +	Check tolerance
cm3/1000 strokes : ← 1.0	cm3/1000s. : 12.0
Check tolerance	
cm3/1000s. : + 4.0	RATED SPEED
<u> </u>	
Spreed	
Tolerance +	control lever
cm3/1000 strokes : 8.0	position degree : 62.0
Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 12.0	control lever
+	position degree : 116.0
2nd speed rpm : 250	tolerance degree : +- 4.0
t	
Rack travel in mm: 4.70	rack travel mm : 12.80
Tolerance mm : + 0.30	Rated speed rpm : 995 Tolerance 1/min : +- 5
Del. quantity + cm3/1000 strokes : 17.0 +	Tolerance 1/min : +- 5
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : +- 3.0	Rated speed rpm : 1:25
Check tolerance	Tolerance 1/min : +- 15
cm3/1000s. : +- 6.0 +	
Spreed	rack travel mm : 0.50
Tolerance +	Tolerance mm : +- 0.50
cm3/1000 strokes : 4.0	Rated speed rpm : 1250
Check tolerance + cm3/1000s. : 8.0 +	
	LOW IDLE
<u> </u>	LOW IDEE
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	control lever
+	position degree : 64.0
†	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	control lever
doing accept to attion	position degree : 10.0
+	tolerance degree : + 4.0
control lever	•
position degree : -1	Testing:
Rated speed rpm : 1150 +	
<b>1</b>	Rated speed rpm : 250
Rack travel in mm: 9.50 + 2.50 +	rack travel mm : 4.70 Tolerance mm : + 0.10
Toterance nam : 7 2.50	roterance im : + 0.10
	Rated speed rpm : 150
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	CRT mm min. : > 6.00
Rated speed rpm : 700	
Aneroid pressure	CONTINUOUS ACTION CONTINU
hPa : -	CONTINUOUS-ACTION CONTROL
Del. quantity + cm3/1000 strokes : 252.0 +	Rated speed rpm : 270
T	nated opecu (piii . L10

# TORQUE CONTROL

Rated speed rpm 700 rack travel mm 13.85 Tolerance mm 0.05

Rated speed rpm 950 13.85 rack travel mm : + 0.05Tolerance mm

## ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

500 Rated speed rpm Pressure hPa 1500 rack travel mm 13.85 Tolerance mm : +- 0.05

#### **MEASUREMENT**

Pressure hPa 500 Rated speed rpm 9.30 rack travel mm 0.20 Tolerance mm

Rated speed rpm 500

375 Pressure hPa 12.05 rack travel mm Tolerance mm : **←** 0.05

Pressure hPa 185 11.00 rack travel mm Tolerance mm : + 0.15

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 950 Rated speed rpm

Del. quantity

cm3/1000 strokes : 237.0

Tolerance

cm3/1000 strokes : +-4.0 Check tolerance

cm3/1000s. 6.0

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 115.0 Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s.4.0 : +-

# BREAKAWAY

Rack travel in mm : 12.80 Rated speed rpm : Tolerance 1/min : +-

#### STARTING FUEL DELIVERY

Rated speed rpm 100 9.30 rack travel mm Tolerance mm : +- 0.20 Del. quantity

cm3/1000 strokes : 125.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : +- 24.0

## LOW IDLE

250 Rated speed rpm rack travel mm 4.70 Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s. 6.0 Spreed

Tolerance

cm3/1000 strokes : 4.0 Check tolerance

cm3/1000s. 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.03.95 Test oil : ISO 4113

Combination No. : 0403246042

Injection pump

Pump designation : PES6MW100/720RS1522

EP type number : 0413206023

Governor

Governer design. : RQV300...1300MW148

: -7

Governer no. : 0420083328

Cust. part No. : 0250748102

Customer—spec. information Customer : MB-NFZ

Motor : OM366LA Power KW : 155.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : <1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 13.45

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 118.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes	: 4.5	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	: 7.0	
2nd speed rpm	: 300	GUIDE SLEEVE POSITION
Rack travel in mm		Rated speed rpm : 1500
Tolerance mm Del. quantity cm3/1000 strokes	: + 0.20 : 12.0	Rack travel in mm : 10.00 Tolerance mm : +- 2.50
Tolerance cm3/1000 strokes	+	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	: + 4.5	Rated speed rpm : 1300
Spreed Tolerance	1	Aneroid pressure hPa : 1200
cm3/1000 strokes Check tolerance	: 2.0	Del. quantity cm3/1000 strokes : 118.0
cm3/1000s.	: 4.0	Tolerance cm3/1000 strokes : +- 1.0
(B) SETTING OF INJ	ECTION PUMP	Check tolerance cm3/1000s. : +- 3.0
WITH GOVERNOR		Spreed Tolerance cm3/1000 strokes : 4.5
GUIDE SLEEVE TRAVE	L .	Check tolerance cm3/1000s. : 7.0
Rated speed rpm guide sleeve	: 300	
travel mm	: 0.92 : + 0.25	RATED SPEED
Rated speed rpm guide sleeve	: 1355	control lever position degree : 120.0
travel mm	: 9.32 : + 0.25	tolerance degree : +- 4.0
Rated speed rpm	+	rack travel mm : 12.45 Rated speed rpm : 1345
guide sleeve travel mm	: 7.06	Tolerance 1/min : + 5
	: ← 0.25 +	rack travel mm : 4.00 Rated speed rpm : 1475
Rated speed rpm : guide sleeve	: 514	Tolerance 1/min : + 15
travel mm Tolerance mm	: 2.14 : + 0.25	rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm : guide sleeve	: 564	Rated speed rpm : 1600
travel mm :	: 2.60 : + 0.25	LOW IDLE
	: 740	control lever
guide sleeve travel mm : Tolerance mm :	3.93 + 0.25	position degree : 74.0 tolerance degree : +- 4.0
Rated speed rpm :	+	Testing:

Rated speed rpm	: 300_	+ Aneroid pressure
rack travel mm Tolerance mm		† hPa : 1200
rocerance limit	. += 0.10	+ Rated speed rpm : 750 + Del. quantity
Rated speed rpm	: 200	cm3/1000 strokes : 114.0 Tolerance
CRT mm min.	: > 5.00	cm3/1000 strokes : + 1.5 Check tolerance
		+ cm3/1000s. : +- 4.0
TORQUE CONTROL		+ Spreed + Tolerance
Rated speed rpm		+ cm3/1000 strokes : 6.0
rack travel mm Tolerance mm	: 13.45 : +- 0.05	+ Check tolerance + cm3/1000s. : 9.0
rocerance min	: + 0.05	+ cm3/1000s. : 9.0
Rated speed rpm	: 750	Aneroid pressure
rack travel mm		+ hPa : 1200
Tolerance mm	: +- 0.10	+ Rated speed rpm : 1300 + Del. quantity
		+ cm3/1000 strokes : 105.0
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		+ cm3/1000 strokes : +- 1.5 + Check tolerance
		+ cm3/1000s. : + 3.0
SETTING		+
Data dan salah masa		+ Aneroid pressure
Rated speed rpm Pressure hPa	: 500 : 1200	+ hPa : -
rack travel mm		+ Rated speed rpm : 500 + Del. quantity
Tolerance mm		- cm3/1000 strokes : 48.0
		+ Tolerance
MEASUREMENT		+ cm3/1000 strokes : +- 1.0
D		+ Check tolerance
Pressure hPa Rated speed rpm	500	+ cm3/1000s. : + 3.0
Tolerance mm	: +- 0.05	I
TOCCI GITTO THE		+ BREAKAWAY
Rated speed rpm	: 500	<u> </u>
Pressure hPa	: 800	Rack travel in mm: 12.45
rack travel mm	: 4.30	+ Rated speed rpm : 1345
Tolerance mm	: <del>+</del> 0.10	Tolerance 1/min : + 5
Pressure hPa	: 300	Į
rack travel mm	1.20	
Tolerance mm	: <del>-</del> 0.10	STARTING FUEL DELIVERY
		Rated speed rpm : 100
START CUT-OUT		+ Del. quantity
S. S. A. L	400	+ cm3/1000 strokes : 150.0
Rated speed rpm Check	: > 100	+ Tolerance + cm3/1000 strokes : +- 5.0
uneck speed 1/min	: > 80	+ Check tolerance
Rated speed rpm		+ cm3/1000s. : +- 8.0
Check		+
speed 1/min	: < 220	†
		Ţ <del></del>
FUEL DELIVERY CHA	ARACTERISTICS	+ LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	4.20
Tolerance mm	: +	0.20
Del. quantity		
cm3/1000 strokes	:	12.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
3preed		
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	4.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.03.95 Test oil : ISO 4113

Combination No. : 0403444154

Injection pump

Pump designation : PES4MW100/720RS1127

EP type number : 0413404103

Governor

Governer design. : RQV300...1300MW48-2

Governer no. : 0420083110

Cust. part No. : 0250746102

Customer—spec. information Customer : MB-NFZ Motor : OM 364 A

Power KW : 85.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1688901101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : +- 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance : + 0.50

book

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.20
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 82.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

\_\_\_\_

Check tolerance		+
cm3/1000s.	: 6.0	GUIDE SLEEVE POSITION
2nd speed rpm	: 300	+
Rack travel in m Tolerance mm		control lever position degree : - 1
Del. quantity cm3/1000 strokes		Rated speed rpm : 1330
Tolerance		Rack travel in mm: 16.50
cm3/1000 strokes Check tolerance		+ Tolerance mm : + 1.30
cm3/1000s. Spreed	: <del>+-</del> 4.5	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes		+ Rated speed rpm : 1300
Check tolerance cm3/1000s.		+ Aneroid pressure + hPa : -
		the Del. quantity cm3/1000 strokes : 82.0
(B) SETTING OF IN	NJECTION PUMP	+ Tolerance + cm3/1000 strokes : +- 1.0
<del></del>		Check tolerance cm3/1000s. : + 3.0
GUIDE SLEEVE TRAN		+ Spreed + Tolerance
Rated speed rpm guide sleeve		+ cm3/1000 strokes : 3.5 + Check tolerance
travel mm Tolerance mm	: 1.40 : +- 0.25	+ cm3/1000s. : 6.0
Rated speed rpm	: 1345	RATED SPEED
guide sleeve travel mm	: 8.59	‡
Tolerance mm	: ← 0.25	+ control lever + position degree : 114.0
Rated speed rpm guide sleeve	: 877	tolerance degree : +- 4.0
travel mm Tolerance mm	: 5.00 : +- 0.25	+ rack travel mm : 10.10 + Rated speed rpm : 1345
Rated speed rpm		Tolerance 1/min : + 5
guide sleeve travel mm	: 2.05	rack travel mm : 4.00 Rated speed rpm : 1435
Tolerance mm	: + 0.25	Tolerance 1/min : + 15
Rated speed rpm guide sleeve	: 413	rack travel mm : 0.50 Tolerance mm : +- 0.50
travel mm Tolerance mm	: 2.50 : +- 0.25	Rated speed rpm : 1550
Rated speed rpm	: 490	LOW IDLE
guide sleeve	: 2.93	LOW IDEE
travel mm Tolerance mm	: + 0.25	control lever
Rated speed rpm	: 1600	+ position degree : 83.0 + tolerance degree : + 4.0
guide sleeve travel mm Tolerance mm	: 11.50 : +- 0.50	Testing:

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min.	: 7.85 : + 0.05	Del. quantity cm3/1000 strokes : 74.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.0
TORQUE CONTROL		BREAKAWAY
Rated speed rpm rack travel mm Tolerance mm	: 1300 : 11.20 : ← 0.05	Rack travel in mm: 10.10 Rated speed rpm: 1345 Tolerance 1/min: +- 5
Rated speed rpm rack travel mm Tolerance mm	: 750 : 11.90 : + 0.15	STARTING FUEL DELIVERY
Rated speed rpm rack travel mm Tolerance mm	: 585 : 12.10 : +- 0.10	+ Rated speed rpm : 100 + Del. quantity + cm3/1000 strokes : 83.0
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 11.35	Tolerance - cm3/1000 strokes : + 5.0 - Check tolerance - cm3/1000s. : + 8.0
START CUT-OUT		† 
Räted speed rpm	: > 100	LOW IDLE
Check		Rated speed rpm : 300 rack travel mm : 7.85
speed 1/min Rated speed rpm	: < 230	Tolerance mm : + 0.20
Check speed 1/min	: < 250	Tolerance mm : 7.85  Del. quantity  mathref{fig: cm3/1000 strokes} : 11.0  Tolerance  cm3/1000 strokes : + 2.0
FIEL DEL TUEDY CHAD	ACTEDIOTICO	cm3/1000 strokes : + 2.0
FUEL DELIVERY CHAR	ACTERISTICS	+ Check tolerance + cm3/1000s. : + 4.5 + Spreed
hPa	:	+ Tolerance
Rated speed rpm Del. quantity	: 750	+ cm3/1000 strokes : 3.5 + Check tolerance
	: 78.0	+ cm3/1000s. : 5.5
cm3/1000 strokes	: + 1.5	Ŧ
Check tolerance cm3/1000s. Spreed	: +- 4.0	<del>-</del>
Tolerance cm3/1000 strokes	: 5.0	†
Check tolerance cm3/1000s.	: 7.0	Ŧ
Aneroid pressure		Ŧ
hPa Rated speed rpm	585	‡

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.03.95 Test oil : ISO 4113

Combination No. : 0403446231

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0413406138

Governor

Governer design. : RQV300...1400MW48-8

Governer no. : 0420083175

Cust. part No. :

Customer-spec. information : MB-NFZ Customer : OM 366 A Motor Power KW : 125.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde

: 1688901101 assembly

Opening pressure

208.5 Tolerance bar : +- 1.5

Test lines : 1680715015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 3.55 : +- 0.05 Tolerance mm

test only : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 10.95 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 75.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes :

3.5

	† tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 6.0	+ + rack travel mm : 9.90
	Rated speed rpm : 1445
2nd speed rpm : 300	Tolerance 1/min : +- 5
Rack travel in mm : 8.05	rack travel mm : 4.00
Tolerance mm : + 0.25	+ Rated speed rpm : 1550
Del. quantity	Tolerance 1/min : + 15
cm3/1000 strokes : 11.0	+
Tolerance	+ rack travel mm : 0.50
cm3/1000 strokes : +- 2.0	+ Tolerance mm : +- 0.50
Check_tolerance	+ Rated speed rpm : 1650
cm3/1000s. : +- 4.5	†
Spreed	
Tolerance	+ LOW IDLE
cm3/1000 strokes : 3.5	· †
Check tolerance	+
cm3/1000s. : 5.5	+ control lever
	+ position degree : 88.0
•	† tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	† .
WITH GOVERNOR	† Testing:
	†
	+ Rated speed rpm : 300
	+ rack travel mm : 8.05
GUIDE SLEEVE POSITION	+ Tolerance mm : + 7.25
	† + Rated speed rpm : 100
control lever	T Rated speed (pill . 100
position degree : - 1	+ CRT mm min. :> 9.50
Rated speed rpm : 1470	
nacea opeca i piii : 1710	
Rack travel in mm : 16.50	TORQUE CONTROL
Tolerance mm : + 1.30	+
	+ Rated speed rpm : 1400
FULL LOAD DELIVERY AT FULL LOAD STOR	P Tolerance mm : +- 0.05
Rated speed rpm : 1400	Rated speed rpm : 750
Aneroid pressure	+ rack travel mm : 12.20
hPa : -	+ Tolerance mm : + 0.10
Del. quantity	+
cm3/1000 strokes : 75.0	+ Rated speed rpm : 950
Tolerance	rack travel mm : 11.95
cm3/1000 strokes : + 1.0	+ Tolerance mm : +- 0.15
Check tolerance	+
cm3/1000s. : +- 3.0	+ Rated speed rpm : 1200
Spreed	+ rack travel mm : 11.15
Tolerance	† Tolerance mm : + 0.15
cm3/1000 strokes : 3.5	+
Check tolerance	+
cm3/1000s. : 6.0	+
	+ START CUT-OUT
DATEN CREEN	Poted speed pps 100
RATED SPEED	+ Rated speed rpm :> 100 + Check
	+ speed 1/min : > 80
control lever	Rated speed rpm : < 200
position degree : 119.0	Trated speed i pill Zoo
TOUR WOMEN TO THE	

Check speed 1/min	: < 230
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: - : 750 : 78.0 : ← 1.5 : ← 4.0 : 5.0
cm3/1000s.	: 7.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 1445
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 85.0
LOW IDLE	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 300 : 8.05 : ← 0.25 : 11.0 : ← 2.0 : ← 4.5 : 3.5 : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.03.95 Edition : ISO 4113 Test oil

Combination No. : 0403476117

Injection pump

Pump designation : PES6MW100/720RS1131

: -1

: 0413406165 EP type number

Governor

Governer design. : RSV750...1200MW0A329

: -15

: 0420085193 Governer no.

Cust. part No. : 0220748502

Customer-spec. information

: MB-NFZ Customer Motor : OM366LA Power KW : 148.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

: 1688901101 assembly

Opening pressure

208.5 bar 1.5 Tolerance bar

: 1680750089 Test lines

Outside diameter : 8.0

x inside diameter: 3.0 600 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : + 1.0

Prestroke mm 3.65 : +- 0.05 Tolerance mm

test only : **←** 0.10

Rack travel in mm : 19.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : + - 0.50

Check

tolerance °NW : + 0.75

# BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm: 13.15 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 104.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance - cm3/1000 strokes : 3.5	
	RATED SPEED
Check tolerance - cm3/1000s. : 6.0 -	<u>†</u>
	control lever
2nd speed rpm : 750	position degree : 97.0 tolerance degree : +- 4.0
Rack travel in mm: 5.05	+
Tolerance mm : + 0.25 - Del. quantity -	+ rack travel mm : 1.00 + Tolerance mm : + 0.70
cm3/1000 strokes : 12.0	Rated speed rpm : 1400
Tolerance	
cm3/1000 strokes : +- 2.0 Check tolerance	LOW IDLE
cm3/1000s. : +- 4.5	t com loce
Spreed -	<del> </del>
Tolerance - cm3/1000 strokes : 3.5 -	control lever
Check tolerance	position degree : 76.0 tolerance degree : +- 4.0
cm3/1000s. : 5.5	-
4	Testing:
(B) SETTING OF INJECTION PUMP	r Rated speed rpm : 750
WITH GOVERNOR	rack travel mm : 5.05
]	Tolerance mm : + 0.25
GUIDE SLEEVE POSITION -	rack travel mm : 2.00
40102 322242 700171014	Rated speed rpm : 100
control lever	- CRT mm min. :> 19.00
position degree : - 3	
Rated speed rpm : 800	- TORQUE CONTROL
Rack travel in mm: 0.65	-
Tolerance mm : +- 0.35	Rated speed rpm : 1180
governor spring	- rack travel mm : 13.15 - Tolerance mm : +- 0.05
pre-tension +	-
click setting $x$ : 4.00	- Rated speed rpm : 600
	- rack travel mm : 13.15 - Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	-
Rated speed rpm : 1180	- ANEROID/ALTITUDE
Aneroid pressure	- COMPENSATOR TEST
hPa : 1000	-
Del. quantity + cm3/1000 strokes : 104.0 +	- - SETTING
Tolerance	-
cm3/1000 strokes : + 1.0 +	- Rated speed rpm : 500 - Pressure hPa : 1000
Check tolerance + 3.0 +	- Pressure hPa : 1000 - rack travel mm : 13.15
Spreed + 3.5	- Tolerance mm : + 0.05
Tolerance	AFACUDENTAT
cm3/1000 strokes : 3.5	- MEASUREMENT
cm3/1000s. : 6.0	Pressure hPa : -
+	Rated speed rpm : 500

Tolerance mm	: ← 0.05
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 500 : 2.20 : ← 0.15
Pressure hPa rack travel mm Tolerance mm	: 350 : 1.10 : + 0.05
FUEL DELIVERY CH	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa	: 97.0 : ← 1.5 : ← 4.0 : 5.0 : 7.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
	. 1- 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
Rated speed rpm	: 750

H08

	5.05
: +-	0.25
:	12.0
: +-	2.0
: +-	4.5
:	3.5
:	5.5
	: +-

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.02.95 Test oil : ISO 4113

Combination No. : 0400074961

Injection pump

Pump designation : PES4M55C32ORS107-1

EP type number : 0410054977

Governor

Governer design. : RSF375/2250M18 Governer no. : 0420021017

Cust. part No. :

Customer-spec. information

Customer : MB-PKW

Motor : 0M616 (2.4 L)

Power KW : 53.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1688901111

Opening pressure

bar : 148.5 Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 2.25
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : 20.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 13.45

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 40.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : +- 1.5

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 3.0

2nd speed rpm : 375

H<sub>0</sub>9

d speed rpm : 450 travel mm : 4.90 rance mm : + 0.10  travel mm : 2.00 d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. : > 11.00 d speed rpm : 1000 mm max. : 1.45 travel mm : 6.10 d speed rpm : 375
d speed rpm : 450 travel mm : 4.90 rance mm : + 0.10  travel mm : 2.00 d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. : > 11.00 d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
travel mm : 4.90 rance mm : + 0.10  travel mm : 2.00 d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. : > 11.00 d speed rpm : 1000 mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
travel mm : 2.00 d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. :> 11.00 d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
travel mm : 2.00 d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. :> 11.00 d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. :> 11.00 d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
d speed rpm : 770 rance 1/min : + 50  pick-up d speed rpm : 250  mm min. : > 11.00 d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
rance 1/min : +- 50  pick-up  d speed rpm : 250  mm min. :> 11.00  d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10  d speed rpm : 375
pick-up d speed rpm : 250 mm min. :> 11.00 d speed rpm : 1000 mm max. : 1.45 travel mm : 6.10 d speed rpm : 375
d speed rpm : 250  mm min. :> 11.00  d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
d speed rpm : 250  mm min. :> 11.00  d speed rpm : 1000  mm max. : 1.45  travel mm : 6.10 d speed rpm : 375
mm min. :> 11.00 d speed rpm : 1000 mm max. : 1.45 travel mm : 6.10 d speed rpm : 375
d speed rpm : 1000  nm max. : 1.45  travel mm : 6.10 d speed rpm : 375
d speed rpm : 1000  nm max. : 1.45  travel mm : 6.10 d speed rpm : 375
nm max. : 1.45 travel mm : 6.10 d speed rpm : 375
nm max. : 1.45 travel mm : 6.10 d speed rpm : 375
travel mm : 6.10 d speed rpm : 375
travel mm : 6.10 d speed rpm : 375
UE CONTROL
IF CONTROL
JE CONTROL
d amond mm . 1000
d speed rpm : 1000 travel mm : 13.45
travel mm : 13.45 rance mm : +- 0.05
artee min
d speed rpm : 1800
travel mm : 12.90
travel mm : 12.90 rance mm : +- 0.10
speed rpm : 2200
travel mm : 12.60
rance mm : + 0.10
DELIVERY CHARACTERISTICS
pressure
/ ADA hPa : -
/ ADA hPa : - I speed rpm : 1800
/ ADA hPa : -   speed rpm : 1800 quantity
/ ADA hPa : - I speed rpm : 1800
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5 vance 000 strokes : + 1.0 tolerance
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5 vance 000 strokes : + 1.0 tolerance 000s. : + 2.0
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5 vance 000 strokes : +- 1.0 t tolerance 000s. : +- 2.0 d
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5 rance 000 strokes : +- 1.0 r tolerance 000s. : +- 2.0 d ance
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5 vance 000 strokes : +- 1.0 t tolerance 000s. : +- 2.0 d ance 000 strokes : 2.5
/ ADA hPa : - I speed rpm : 1800 quantity 000 strokes : 39.5 ance 000 strokes : + 1.0 tolerance 000s. : + 2.0 d ance

Ref. pressure ALDA / ADA hPa Rated speed rpm : 2200 Spreed Del. quantity cm3/1000 strokes : 41.5 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 2.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 HIGH IDLE Rated speed rpm : 2500 8.40 rack travel mm Tolerance mm : **←** 0.20 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +-3.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm 20.13 Del. quantity cm3/1000 strokes : 53.0 Spreed Tolerance cm3/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 6.10
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 8.3

Check tolerance cm3/1000s. : +- 1.8 Spreed Check tolerance

cm3/1000s. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00

degree : < 30.00

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 20.02.95 Edition Test oil : ISO 4113

Combination No. : 0400074978

Injection pump

Pump designation : PES4M50C320RS103

EP type number : 0410054023

Governor

Governer design. : RSF375/2250M19

Governer no. : 0420021018

Cust. part No. :

Customer-spec. information

Customer : MB-PKW

: 0M615 (2.0 L) Motor

Power KW : 44.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde

: 1688901111 assembly

Opening pressure

: 148.5 Tolerance bar

Test lines : 1680750003

Outside diameter : 6.0

x inside diameter: 2.0

x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm 1.75 : + 0.05 Tolerance mm

test only : + 0.10

Rack travel in mm: 20.00 : +- 1.50 Tolerance mm

Firing order : 1-3-4-2

Phasing : 0-90-180-270

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 12.25 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 33.5

Tolerance cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : +- 2.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance cm3/1000s.

3.0

2nd speed rpm : 375

	•
Del. quantity cm3/1000 strokes : 8.0	+ SET IDLE AUXILIARY SPRING
Tolerance	T SEI IDLE AUXILIARY SPRING
cm3/1000 strokes : +- 0.5	Rated speed rpm : 450
Spreed	rack travel mm : 5.20
Tolerance	+ rack travel mm : 5.20 + Tolerance mm : + 0.10
cm3/1000 strokes : 1.0	- Total allocation in the control of
	+ rack travel mm : 2.00
	+ Rated speed rpm : 770
(B) SETTING OF INJECTION PUMP	+ Tolerance 1/min : + 50
WITH GOVERNOR	+
	+ Load pick-up
TNIE CTACE	Detail aread are . 250
IDLE STAGE	Rated speed rpm : 250
	T
Rack travel in mm: 6.00	T CKI HAN WAY
Tolerance mm : +- 0.15	+ Rated speed rpm : 1000
3000	1
	+ CRT mm max. : 1.45
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	+ rack travel mm : 6.50
Rated speed rpm : 1000	Rated speed rpm : 375
Ref. pressure	†
ALDA / ADA hPa : -	†
Del. quantity	TOPOUT CONTROL
cm3/1000 strokes : 33.5 Tolerance	+ TORQUE CONTROL
cm3/1000 strokes : +- 0.5	Poted speed now . 1000
Check tolerance	+ Rated speed rpm : 1000 + rack travel mm : 12.25
cm3/1000s. : +- 2.0	+ Tolerance mm : + 0.05
Spreed	T Total affice likil
Tolerance	Rated speed rpm : 1800
cm3/1000 strokes : 2.5	rack travel mm : 11.80
Check tolerance	+ Tolerance mm : + 0.10
cm3/1000s. : 3.0	+
	+ Rated speed rpm : 2200
	+ rack travel mm : 11.40
RATED SPEED	† Tolerance mm : + 0.10
	†
annimat lavan	<b>†</b>
control lever position degree : 50.0	†
position degree : 50.0	I
rack travel mm : 6.90	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 2500	TOLL PLEIVENT CHANACTERIOTICS
	Ref. pressure
rack travel mm : 0.50	+ ALDA / ADA hPa : -
Tolerance mm : + 0.50	+ Rated speed rpm : 1800
Rated speed rpm : 2950	+ Del. quantity
, ,	+ cm3/1000 strokes : 33.5
	+ Tolerance
SET IDLE CONTROL LEVER POSITION	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
Rated speed rpm : 1000	+  cm3/1000s. : +- 2.0
4.45	+ Spreed
CRT mm max. : 1.45	+ Tolerance
	+ cm3/1000 strokes : 2.5
LOU TO E	+ Check tolerance + cm3/1000s. : 3.0
LOW IDLE	+  cm3/1000s. : 3.0

Ref. pressure ALDA / ADA hPa Rated speed rpm 2200 Spreed Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 2.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 HIGH IDLE 2500 Rated speed rpm 6.90 rack travel mm Tolerance mm 0.20 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 3.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.10 Del. quantity cm3/1000 strokes : 55.0 Spreed Tolerance cm3/1000 strokes : 6.0 LOW IDLE Rated speed rpm 375 6.50 rack travel mm 0.10 Tolerance mm

Check tolerance cm3/1000s. : + 1.8 Spreed Check tolerance cm3/1000s. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

: < 30.00

degree : > 47.00

degree

Del. quantity

cm3/1000 strokes :

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.02.95 Edition Test oil : ISO 4113

Combination No. : 0400075991

Injection pump

Pump designation : PES5M55C32ORS108-1

EP type number : 0410055992

Governor

Governer design. : RSF350/2300M15

Governer no. : 0420021014

Cust. part No. :

Customer-spec. information

Customer : MB-PKW

Motor : 0M617 (3.0 L)

Power KW : 65.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde

: 1688901111 assembly

Opening pressure

bar 148.5 Tolerance bar

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : + 1.0

Prestroke mm 2.25 : +- 0.05 Tolerance mm

test only : + 0.10

Rack travel in mm: 20.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 40.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. 1.5

Spreed

Tolerance

cm3/1000 strokes :

2.5

Check tolerance cm3/1000s.

350

3.0

2nd speed rpm Del. quantity

cm3/1000 strokes : 7.5

H15

Tolerance cm3/1000 strokes : +- 0.5control lever Spreed position degree : 11.0 Tolerance tolerance degree : + 2.0 cm3/1000 strokes : 1.0 SET IDLE AUXILIARY SPRING (B) SETTING OF INJECTION PUMP 450 Rated speed rpm : WITH GOVERNOR rack travel mm : 4.70 : + 0.10Tolerance mm 2.00 IDLE STAGE rack travel mm Rated speed rpm : Tolerance 1/min Rack travel in mm: 6.00 Tolerance mm :  $\leftarrow$  0.15 Load pick-up Rated speed rpm 250 FULL LOAD DELIVERY AT FULL LOAD STOP : > 10.00 CRT mm min. 1000 Rated speed rpm : Ref. pressure Rated speed rpm : 1000 ALDA / ADA hPa Del. quantity CRT mm max. : 1.45 cm3/1000 strokes : 40.5 Tolerance 6.10 rack travel mm cm3/1000 strokes : +-0.5 Rated speed rpm : Check tolerance cm3/1000s. : + 1.5Spreed Tolerance TORQUE CONTROL cm3/1000 strokes : 2.5 Check tolerance Rated speed rpm 1000 cm3/1000s. 3.0 rack travel mm 13,45 Tolerance mm : + 0.05RATED SPEED 1800 Rated speed rpm 13.10 rack travel mm : + 0.10Tolerance mm control lever position degree : Rated speed rpm 50.0 2200 12.60 rack travel mm rack travel mm 8.80 Tolerance mm : + 0.102500 Rated speed rpm rack travel mm 0.50 : : + 0.50 Tolerance mm Rated speed rpm 2950 FUEL DELIVERY CHARACTERISTICS SET IDLE CONTROL LEVER POSITION Ref. pressure ALDA / ADA hPa Rated speed rpm : 1800 Rated speed rpm 1000 Del. quantity CRT mm max. 1.45 cm3/1000 strokes : 39.5 : Tolerance cm3/1000 strokes : +- 1.0LOW IDLE Check tolerance cm3/1000s.: +-2.0

Spreed

Tolerance	
cm3/1000 strokes Check tolerance	: 2.5
cm3/1000s.	: 3.0
Ref. pressure	
ALDA / ADA hPa	-
Rated speed rpm	: 2200
Spreed Del. quantity	
cm3/1000 strokes	: 41.5
Tolerance	4.0
cm3/1000 strokes Check tolerance	: <del>-</del> 1.0
cm3/1000s.	: <del></del> 2.0
Spreed	
Tolerance cm3/1000 strokes	: 2.5
Check tolerance	. 2.3
cm3/1000s.	: 3.0
HIGH IDLE	
Rated speed rpm	: 2500
rack travel mm	: 8.80
Tolerance mm	: +- 0.20
Del. quantity cm3/1000 strokes	: 25.0
Tolerance	
cm3/1000 strokes	: <del></del> 2.0
Check tolerance cm3/1000s.	: +- 3.0
Spreed	. , 5.0
Tolerance	
cm3/1000 strokes Check tolerance	: 2.5
cm3/1000s.	: 3.0
STARTING FUEL DEL	
Rated speed rpm	: 100
rack travel mm Del. quantity	: 20.10
cm3/1000 strokes	: 53.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Emar Your Strokes	: 6.0
LOW IDLE	

Tolerance mm : +- 0.10 Del. quantity		
cm3/1000 strokes : 8.3 Check tolerance		
cm3/1000s. : + 1.8 Spreed		
Check tolerance cm3/1000s. : 1.5		
CHECKING THE IDLE-SPEED AUXILIARY		
degree : > 47.00		
degree : < 30.00		
SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)		
control lever position degree : 11.0 tolerance degree : +- 2.0		
control lever position degree : 50.0		
Adjustment of the control-rod travel sensor		
control lever position degree : 50.0		

Rated speed rpm : 350 rack travel mm : 6.10

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.03.95 Test oil : ISO 4113

Combination No. : 0400844095

Injection pump

Pump designation : PES4A95D410RS2809

EP type number : 0410894993

Governor

Governer design. : RQV300...1400AB1065

: -23L

Governer no. : 0420212227

Cust. part No. :

Customer—spec. information
Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0681343009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25Tolerance mm : +0.05

test only :  $\leftarrow$  0.10

Rack travel in mm : ^7.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 9.95

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 65.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : + 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.5

	+ tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 6.0	t pack traval on a 8 00
CIII37 (UUU3. : 0.U	+ rack travel mm : 8.90 + Rated speed rpm : 1455
2nd speed rpm : 300	Tolerance 1/min : + 5
- 1	+
Rack travel in mm : 8.50 Tolerance mm : +- 0.10	+ rack travel mm : 4.00
Tolerance mm : +- 0.10 Del. quantity	+ Rated speed rpm : 1550 + Tolerance 1/min : + 15
cm3/1000 strokes : 10.0	Total de 17 mill
Tolerance	rack travel mm : 0.50
cm3/1000 strokes : + 2.0	Tolerance mm : + 0.50
Check tolerance cm3/1000s. : +- 4.5	+ Rated speed rpm : 1670
Spreed	
Tolerance	+ LOW IDLE
cm3/1000 strokes : 3.5	†
Check tolerance cm3/1000s. : 5.5	t control lever
CIID7 10003	position degree : 77.0
	tolerance degree : + 4.0
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	Testing:
	Rated speed rpm : 300
	+ rack travel mm : 8.50
GUIDE SLEEVE POSITION	† Tolerance mm : ← º.10
	Rated speed rpm : 100
control lever	+
position degree : - 1	+ CRT mm min. :> 9.60
Rated speed rpm : 1450	†
Rack travel in mm : 16.50	T CONTINUOUS-ACTION CONTROL
Tolerance mm : + 1.30	+
	+ Rated speed rpm : 625
FULL LOAD DELIVERY AT FULL LOAD STOP	
	TORQUE CONTROL
Rated speed rpm : 1400	+
Aneroid pressure hPa : -	+ Rated speed rpm : 1400 + rack travel mm : 9.95
Del. quantity	+ Tolerance mm : +- 0.05
cm3/1000 strokes : 65.5	+
Tolerance	+ Rated speed rpm : 400
cm3/1000 strokes : +- 0.5 Check tolerance	+ rack travel mm : 10.80 + Tolerance mm : + 0.10
cm3/1000s. : + 2.5	T Toterance in 0.10
Spreed	Rated speed rpm : 670
Tolerance	Rated speed rpm : 670 rack travel mm : 10.60
cm3/1000 strokes : 3.5 Check tolerance	† Tolerance mm : ← 0.10
cm3/1000s. : 6.0	+ Rated speed rpm : 1060
	rack travel mm : 10.25
	Tolerance mm : + 0.15
RATED SPEED	1
control lever	START CUT-OUT
position degree : 115.0	+

100 Rated speed rpm : > Check : > speed 1/min 80 Rated speed rpm : < 220 Check speed 1/min : < 240 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm 400 Del. quantity cm3/1000 strokes : 49.5 Tolerance cm3/1000 strokes : +-1.5 Check tolerance cm3/1000s. 4.0 **BREAKAWAY** Rack travel in mm: 8.90 Rated speed rpm : 1455 Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm 100 15.00 rack travel mm Tolerance mm : + 0.20Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes :  $\leftarrow$  5.0 Check tolerance cm3/1000s. 8.0 LOW IDLE 300 Rated speed rpm rack travel mm 8.50 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 10.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 3.5

Check tolerance cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.03.95 Test oil : ISO 4113

Combination No. : 0402046827

Injection pump

Pump designation : PES6P12OA32ORS3284

EP type number : 0412026749

Governor

Governer design. : RQ275/1050PA999-3

Governer no. : 0421801598

Cust. part No. : CCEP5119A

Customer-spec. information

Customer : RVI

Motor : MIDR/PR 062045

Power KW : 186.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

test only :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.35 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance + cm3/1000 strokes : 5.0 +	Testing:
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 275 rack travel mm : -5.50 Tolerance mm : + 0.10
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : -8.10 Rated speed rpm : 340 Tolerance 1/min : +- 20
<del>-</del>	Rated speed rpm : 200
GUIDE SLEEVE POSITION	CRT mm max. : < -4.00
Rated speed rpm : 600	
Rack travel in mm: 20.00	TORQUE CONTROL
Tolerance mm : +- 0.80	Rated speed rpm : 1050 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 700 + Aneroid pressure	ANEROID/ALTITUDE COMPENSATOR TEST
hPa : 1000 +	05777110
Del. quantity + cm3/1000 strokes : 155.0 +	SETTING
Tolerance + 1.0 +	Rated speed rpm : 500 Pressure hPa : 1000
Check tolerance	Pressure nPa : 1000
cm3/1000s. : + 4.0 +	MEASUREMENT
Tolerance	Pressure hPa : -
cm3/1000 strokes : 5.0	Rated speed rpm : 500
Check tolerance + cm3/1000s. : 9.0 +	rack travel mm : -2.20 Tolerance mm : +- 0.10
RATED SPEED +	Rated speed rpm : 500
+	Pressure hPa : 360
rack travel mm : -1.00 + Rated speed rpm : 1128 +	rack travel mm : -0.40 Tolerance mm : +- 0.20
Rated speed rpm : 1128 + Tolerance 1/min : + 8 +	Tolerance mm : +- 0.20
<u>+</u>	Pressure hPa : 200
rack travel mm : -6.30	rack travel mm : -1.45
Rated speed rpm : 1205 + Tolerance 1/min : + 15 +	Tolerance mm : ← 0.05
	OTADT OUT OUT
rack travel mm : -9.85 Tolerance mm : +- 0.55	START CUT-OUT
Rated speed rpm : 1350	Rated speed rpm : > 100 Check
+	speed 1/min : > 80
LOW IDLE	Rated speed rpm : < 195
İ	Check speed 1/min : < 215
control lever	opoca (/iii/ii
position degree : 252.0	
tolerance degree : + 4.0	FUEL DELIVERY CHARACTERISTICS
+	

Aneroid pressure

1000 hPa 1050 Rated speed rpm

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity cm3/1000 strokes : 81.0

Tolerance

cm3/1000 strokes 1.0

Check tolerance

cm3/1000s. 4.0

#### **BREAKAWAY**

Rack travel in mm: -1.00 Rated speed rpm : 1128

8 Tolerance 1/min : +-

#### STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : + 19.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.95 : ISO 4113

Test oil

Combination No. : 0402046830

Injection pump

Pump designation : PES6P12OA32ORS3290

EP type number : 0412026751

Governor

Governer design. : RQ275/950PA999-4

Governer no. : 0421801612

Cust. part No. : CCEP 5123A

Customer-spec. information

Customer : RVI

Motor

: MIDR/PR062045

Power KW

: 151.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 2417413071

Inlet press. bar :

2.5

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1688901105

Opening pressure

bar

: 208.5

Tolerance bar

: **←** 1.5

Lube oil

: 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.25 Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm: 19.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: **←** 0.30

Check

tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm :

500

Rack travel in mm: 12.85 Tolerance mm: + 0.05	Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance
Del. quantity cm3/1000 strokes : 142.0	cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000s. : 9.0
Check tolerance cm3/1000s, : + 4.0	RATED SPEED rack travel mm : -1.00
Spreed	Rated speed rpm : 1018 Tolerance 1/min : +- 8
Tolerance + cm3/1000 strokes : 5.0	rack travel mm : -8.80 Rated speed rpm : 1110
Check tolerance cm3/1000s. : 9.0	Tolerance 1/min : + 15
2nd speed rpm : 250	rack travel mm : -12.35 Tolerance mm : +- 0.55 Rated speed rpm : 1250
Rack travel in mm : -7.80  Tolerance mm : + 0.20	LOW IDLE
Del. quantity cm3/1000 strokes : 24.0 Tolerance	Testing:
cm3/1000 strokes : +- 2.0	Rated speed rpm : 250 rack travel mm : -7.80
Spreed - Tolerance	Tolerance mm : +- 0.10
cm3/1000 strokes : 8.0 + Check tolerance cm3/1000s. : 12.0 +	rack travel mm : -10.85 Rated speed rpm : 335 Tolerance 1/min : +- 20
+	Rated speed rpm : 200
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CRT mm max. : < -6.80
GUIDE SLEEVE POSITION	TORQUE CONTROL
Rated speed rpm : 600	Rated speed rpm : 950 Tolerance mm : +- 0.10
Rack travel in mm : 20.00 Tolerance mm : + 0.80	Rated speed rpm : 500 rack travel mm : -4.00 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	ANEROID/ALTITUDE
Rated speed rpm : 500 Aneroid pressure	COMPENSATOR TEST
hPa : 1000 + Del. quantity cm3/1000 strokes : 142.0 +	SETTING
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 500 Pressure hPa : 1000

## **MEASUREMENT**

Pressure hPa	:	_
Rated speed rpm	:	500
rack travel mm	:	-1.90
Tolerance mm	: +	- 0.20

#### 500 Rated speed rpm :

Pressure hPa	:	320
rack travel mm	:	-0.45
Tolerance mm	: +-	- 0.15

Pressure hPa	:	160
rack travel mm	:	-1.45
Tolerance mm	: +	- 0.05

#### START CUT-OUT

Rated speed rpm	: >	100
Check		
speed 1/min	: >	80
Rated speed rpm	: <	195
Check		
speed 1/min	: <	215

#### FUEL DELIVERY CHARACTERISTICS

# Aneroid pressure

hPa	:	1000
Rated speed rpm	:	950
Del. quantity		

cm3/1000 strokes : 158.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

# Aneroid pressure

hPa	:	1000
Rated speed rpm	:	500
Del. quantity		

cm3/1000 strokes : 79.0

Tolerance

cm3/1000 strokes : +-5.0

Check tolerance cm3/1000s. : +--8.0

Aneroid pressure

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 104.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 4.0

#### BREAKAWAY

Rack travel in mm	:	-1.00
Rated speed rpm	:	1018
Tolerance 1/min	:	+- 8

#### STARTING FUEL DELIVERY

Del.	quantity	
------	----------	--

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : + 19.0

# LOW IDLE

Rated speed rpm	:	250
rack travel mm	:	7.80
Tolerance mm	: +-	U.20
Del. quantity		
cm3/1000 strokes	:	24.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.03.95 Edition Test oil : ISO 4113

Combination No. : 0402646910

Injection pump

Pump designation : PE6P12OA32ORS7138

: -10

EP type number : 0412626922

Governor

Governer design. : RQV200...1100PA712

: -5

Governer no. : 0421813951

Cust. part No. : 1318823

Customer-spec. information Customer : SCANIA Motor

: DSC908

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : : +- 0.1 Tolerance bar

Test nozzle holde

: 1688901104 assembly

Opening pressure

251.5 bar : + 1.5 Tolerance bar

: 1680750008 Test Lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : **←** 0.05 Tolerance mm

test only : +- U.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + - 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.15
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 180.0	Spreed Tolerance cm3/1000 strokes : 8.0
Tolerance cm3/1000 strokes : +- 1.0	Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000s. : +- 4.0	RATED SPEED
Spreed Tolerance cm3/1000 strokes : 8.0	control lever position degree : 63.0 tolerance degree : + 4.0
Check tolerance cm3/1000s. : 12.0	control lever position degree : 118.0
2nd speed rpm : 250	tolerance degree : +- 4.0
Rack travel in mm: 5.30 Tolerance mm: + 0.30 Del. quantity cm3/1000 strokes: 16.0	rack travel mm : 12.10 Rated speed rpm : 1145 Tolerance 1/min : +- 5
Tolerance : + 3.0 Check tolerance cm3/1000s. : + 6.0	rack travel mm : 4.00 Rated speed rpm : 1305 Tolerance 1/min : + 15
Spreed +	rack travel mm : 0.50 Tolerance mm : + 0.50
cm3/1000 strokes : 4.0 + Check tolerance +	Rated speed rpm : 1400
cm3/1000s. : 8.0 +	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 64.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	<pre>control lever position degree : 9.0 tolerance degree : +- 4.0</pre>
control lever position degree : -1 Rated speed rpm : 1130	Testing:
Rack travel in mm: 16.50 Tolerance mm: + 1.30	Rated speed rpm : 250 rack travel mm : 4.60 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 150
Rated speed rpm : 700	CRT mm min. : > 5.80
Aneroid pressure + + + + + + + + + + + + + + + + + + +	CONTINUOUS-ACTION CONTROL
Del. quantity cm3/1000 strokes : 180.0 + Tolerance +	Rated speed rpm : 250
cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0	TORQUE CONTROL
1	

Rated speed rpm 700 13.15 rack travel mm Tolerance mm : + 0.05Rated speed rpm 1100 rack travel mm 13.15 : + 0.05 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 1500 rack travel mm 13.15 Tolerance mm : +- 0.05 **MEASUREMENT** Pressure hPa Rated speed rpm 500 10.30 rack travel mm Tolerance mm : **←** 0.20 Rated speed rpm 500 Pressure hPa 480 12.35 rack travel mm Tolerance mm : + 0.05 Pressure hPa 220 10.80 rack travel mm : **←** 0.20 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm 1100 Del. quantity cm3/1000 strokes : 166.0 Tolerance cm3/1000 strokes : +-4.0 Check tolerance 6.0 cm3/1000s. Aneroid pressure 500 Rated speed rpm Del. quantity cm3/1000 strokes : 116.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance

#### BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1145
Tolerance 1/min : +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.30 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 130.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 24.0

#### LOW IDLE

Rated speed rpm 250 5.30 rack travel mm Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.07.94 Test oil : ISO 4113

Combination No. : 0402646937

Injection pump

Pump designation : PE6P120A720RS7188

: -100

EP type number : 0412626925

Governor

Governer design. : RQV200...950PA725-7

Governer no. : 0421813803

Cust. part No. : 1333121

Customer—spec. information Customer : SCANIA Motor : DSC11 21

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1688901104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### **REMARKS**

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

test only :  $\leftarrow$  U.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75
Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 220.0	Spreed Tolerance cm3/1000 strokes : 8.0
Tolerance cm3/1000 strokes : +- 1.0	Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000s. : +- 4.0	RATED SPEED
Spreed Tolerance cm3/1000 strokes : 8.0	control lever position degree : 112.0 tolerance degree : + 4.0
Check tolerance cm3/1000s. : 12.0	control lever position degree : 60.0
2nd speed rpm : 250	tolerance degree : +- 4.0
Rack travel in mm: 4.70 Tolerance mm: + 0.30 Del. quantity cm3/1000 strokes: 16.0	rack travel mm : 11.70 Rated speed rpm : 995 Tolerance 1/min : + 5
Tolerance cm3/1000 strokes : + 3.0 + Check tolerance cm3/1000s. : + 6.0 + 6.0	rack travel mm : 4.00 Rated speed rpm : 1120 Tolerance 1/min : + 15
Spreed Tolerance	rack travel mm : 0.50 Tolerance mm : + 0.50
cm3/1000 strokes : 4.0 + Check tolerance	Rated speed rpm : 1250
cm3/1000s. : 8.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 10.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	control lever position degree : 62.0 tolerance degree : +- 4.0
control lever position degree : -1 Rated speed rpm : 1150	Testing:
Rack travel in mm: 9.50 Tolerance mm: + 2.50	Rated speed rpm : 250 rack travel mm : 4.70 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 150
Rated speed rpm : 700	CRT mm min. :> 6.00
Aneroid pressure +	CONTINUOUS-ACTION CONTROL
Del. quantity cm3/1000 strokes : 220.0 Tolerance	Rated speed rpm : 275
cm3/1000 strokes : ← 1.0 Check tolerance cm3/1000s. : ← 4.0	TORQUE CONTROL

Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.75 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.75 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.40 : ← 0.20
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 270 : 11.00 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 440 : 12.05 : +- 0.05
FUEL DELIVERY CHA	NRACTERISTICS
Aneroid pressure hPa Rated speed rpm	: - : 950
Del. quantity cm3/1000 strokes	: 209.0
Tolerance cm3/1000 strokes Check tolerance	: +- 4.0
cm3/1000s.	: +- 6.0
Aneroid pressure	
Rated speed rpm Del. quantity	: - : 500
cm3/1000 strokes Tolerance	: 153.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: +- 4.0
BREAKAWAY	

Rack travel in mm : 11.70
Rated speed rpm : 995
Tolerance 1/min : + 5

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.40 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 165.0 Tolerance cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0

# LOW IDLE

Rated speed rpm	:	250
rack travel mm	:	4.70
Tolerance mm	: +-	9.30
Del. quantity		
cm3/1000 strokes	:	16.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000s.	:	8.9

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.03.95 Test oil : ISO 4113

Combination No. : 0402746647

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0412726933

Governor

Governer design. : RQV275...1100PA1208K

Governer no. : 0421815459

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41.4000

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5 Tolerance bar : ← 0.1

Overflow quantity

min. L/h : 140 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5 Tolerance bar :  $\leftarrow$  1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 273.0

Tolerance	**************************************	+ Tolerance mm : +- 0.50
cm3/1000 strokes	: + 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s.	: <del>-</del> 4.0	‡
Spreed Tolerance cm3/1000 strokes	: 5.0	control lever position degree : - 1 Rated speed rpm : 1310
Check tolerance cm3/1000s.	: 9.0	+ Rack travel in mm : 10.00 + Tolerance mm : +- 1.30 +
2nd speed rpm	: 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm Tolerance mm Del. quantity	6.40 : + 0.20	Rated speed rpm : 1100 Aneroid pressure hPa : 1200
cm3/1000 strokes Tolerance cm3/1000 strokes		Del. quantity cm3/1000 strokes : 273.0 Tolerance
Check tolerance cm3/1000s. Spreed	: +- 6.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0	+ Spreed + Tolerance + cm3/1000 strokes : 5.0 + Check tolerance
(B) SETTING OF IN		cm3/1000s. : 9.0
WITH GOVERNOR		RATED SPEED
GUIDE SLEEVE TRAV	EL.	t + control lever + position degree : 117.0
Rated speed rpm guide sleeve		tolerance degree : +- 4.0
travel mm Tolerance mm	: 1.75 : + 0.20	rack travel mm : 11.70 Rated speed rpm : 1145 Tolerance 1/min : +- 5
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1155 : 9.75 : + 0.15	+ rack travel mm : 4.00 + Rated speed rpm : 1250 + Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	: 791	rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm Tolerance mm	: 6.42 : + 0.25	Rated speed rpm : 1350
Rated speed rpm guide sleeve	: 460	LOW IDLE
travel mm Tolerance mm	: 3.77 : + 0.25	control lever position degree : 64.0
Rated speed rpm guide sleeve travel mm	: 1440 : 13.50	tolerance degree : +- 4.0  Testing:
CLOVE LIBIT	. 13.30	T resumy.

		+ Rated speed rpm : > 170
Rated speed rpm	: 275	+ Rated speed rpm : > 170 + Check
rack travel mm	: 6.40	+ speed 1/min : > 150
Tolerance mm	: <b>←</b> 0.10	+ Rated speed rpm : < 220
Rated speed rpm	: 100	+ Check + speed 1/min : < 240
	. 7.00	+
CRT mm min.	: > 7.90	FUEL DELIVERY CHARACTERISTICS
CONTINUOUS-ACTIO	N CONTROL	Aneroid pressure
CONTINUOUS ACTIO	A COMMOE	+ hPa : 1200
Rated speed rpm	: 335	Rated speed rpm : 800
•		+ Del. quantity
		+ cm3/1000 strokes : 296.0
TORQUE CONTROL		† Tolerance
Rated speed rpm	: 1100	+ cm3/1000 strokes : + 3.0 + Check tolerance
rack travel mm		+ cm3/1000s. : + 6.0
Tolerance mm	: + 0.05	1 (115) 10005.
		Aneroid pressure
Rated speed rpm		+         hPa         : 1200
rack travel mm		Rated speed rpm : 500
Tolerance mm	: <b>←</b> 0.10	+ Del. quantity
Rated speed rpm	: 650	+ cm3/1000 strokes : 273.0 + Tolerance
rack travel mm		+ cm3/1000 strokes : +- 3.0
Tolerance mm	: + 0.10	+ Check tolerance
		+  cm3/1000s. : + 6.0
Rated speed rpm		+
rack travel mm		+ Aneroid pressure
Tolerance mm	: <del>+-</del> 0.10	† hPa : -
		Rated speed rpm : 500 Del. quantity
ANEROID/ALTITUDE		cm3/1000 strokes : 144.0
COMPENSATOR TEST		+ Tolerance
		+ cm3/1000 strokes : $+$ 1.0
		+ Check tolerance
SETTING		+ cm3/1000s. : + 4.0
Dahad anaad aa	. 900	†
Rated speed rpm Pressure hPa	: 800 : 1200	BREAKAWAY
rack travel mm	: 13.40	DIVENINAMAT
Tolerance mm	: <b>←</b> 0.05	<del> </del>
		Rack travel in mm: 11.70
MEASUREMENT		+ Rated speed rpm : 1145
<b>5</b> . <b>.</b>		† Tolerance 1/min : ← 5
Rated speed rpm	: 800	1
Pressure hPa	: 290	
rack travel mm	: 10.50	+ STARTING FUEL DELIVERY
Tolerance mm	: + 0.20	<del>}</del>
	<b>500</b>	Rated speed rpm : 100
Pressure hPa	: 520	+ Del. quantity
rack travel mm Tolerance mm	: 12.50 : +- 0.05	+ cm3/1000 strokes : 125.0 + Tolerance
TOTE ALLE IN		+ cm3/1000 strokes : + 15.0
		- Check tolerance
START CUT-OUT		+ cm3/1000s. : $+$ 19.0
		1

# LOW IDLE

275 Rated speed rpm rack travel mm 6.40 Tolerance mm 0.20 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03.03.95 : ISO 4113

Combination No. : 0402746909

Injection pump

Pump designation : PES6P120A320RS7236

EP type number : 0412726848

Governor

Governer design. : RQV275...1000PA1001

: -1

Governer no.

: 0421813936

Cust. part No. : CCEP 5116A PROJ.171

Customer-spec. information

Customer : RVI

: MIDR 063540 J/3 Motor

: 306.0 Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

40

Tolerance °C 2.0

: 2417413071 Overflow valve

Inlet press. bar : 2.5

Test nozzle holde

: 1688901105 assembly

Opening pressure

: 208.5 bar

Tolerance bar : +- 1.5

: 1409918004 Lube oil

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

4.55 Prestroke mm : +- J.05 Tolerance mm

test only : ← 0.10

Rack travel in mm: 13.50 : +- 0.50

Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: + 0.30Tolerance

Check

tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 13.80

Tolerance mm :  $\leftarrow$  0.05

Del. quantity	Check tolerance cm3/1000s. : +- 4.0
cm3/1000 strokes : 310.0	Spreed Tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000s. : 9.0
Spreed	RATED SPEED
Tolerance cm3/1000 strokes : 5.0	control lever position degree : 302.0
Check tolerance cm3/1000s. : 9.0	tolerance degree : +- 4.0
2nd speed rpm : 300	rack travel mm : -1.00 Rated speed rpm : 1070 Tolerance 1/min : +- 5
Rack travel in mm: -8.60 + Tolerance mm: +- 0.20 +	rack travel mm : -9.70
Del. quantity cm3/1000 strokes : 31.0	Rated speed rpm : 1210 Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : + 2.0	rack travel mm : -13.25
Check tolerance cm3/1000s. : + 5.0 + 5.0 + 5.0	Tolerance mm : + 0.55 Rated speed rpm : 1750
Tolerance cm3/1000 strokes : 8.0	LOW IDLE
Check tolerance : 12.0	
(B) SETTING OF INJECTION PUMP	<pre>control lever position degree : 246.0 tolerance degree : +- 4.0</pre>
WITH GOVERNOR	Testing:
+	-
GUIDE SLEEVE POSITION	Rated speed rpm : 300 rack travel mm : -8.60 Tolerance mm : +- 0.10
control lever	Rated speed rpm : 200
position degree : -1 Rated speed rpm : 1150	CRT mm max. : < −7.20
Rack travel in mm : 16.50 + Tolerance mm : + 1.30 +	CONTINUOUS-ACTION CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 370
Rated speed rpm : 600 +	TORQUE CONTROL
Aneroid pressure hPa : 1000	
Del. quantity	Rated speed rpm : 1000 Tolerance mm : +- 0.10
cm3/1000 strokes : 310.0 + Tolerance	Rated speed rpm : 500
cm3/1000 strokes : +- 1.0 +	rack travel mm : -5.50 Tolerance mm : +- 0.10

		+ Spreed
ANEROID/ALTITUDE		
COMPENSATOR TEST		+ Check tolerance
COLL EMONION LEGI		- cm3/1000s. : 12.0
		100000
SETTING		Aneroid pressure
		+ hPa : −
Rated speed rpm		+ Rated speed rpm : 500
Pressure hPa	: 1000	Del. quantity
MEASUREMENT		+ cm3/1000 strokes : 152.0 + Tolerance
MENOUREMENT		+ cm3/1000 strokes : +- 1.0
Pressure hPa	: -	Check tolerance
Rated speed rpm	: 500	+ cm3/1000s. : + 4.0
rack travel mm	: -5.00	+
Tolerance mm	: <del></del> 0.20	
Data dama adama		BREAKAWAY
Rated speed rpm	: 500	<u>†</u>
Pressure hPa	: 240	Rack travel in mm: -1.00
rack travel mm	: -3.80	+ Rated speed rpm : 1070
Tolerance mm	: +- 0.20	+ Tolerance 1/min : + 5
		+
Pressure hPa	: 600	+
rack travel mm	: -0.95	
Tolerance mm	: ← 0.05	+ STARTING FUEL DELIVERY
START CUT-OUT		———— + Del. quantity + cm3/1000 strokes : 160.0
START COT OUT		+ Tolerance
Rated speed rpm	: > 100	+ cm3/1000 strokes : +- 10.0
Check		+ Check tolerance
speed 1/min	: > 80	+ cm3/1000s. : +- 14.0
Rated speed rpm	: < 225	†
Check	4 045	†
speed 1/min	: < 245	†
		LOW IDLE
FUEL DELIVERY CHA	ARACTERISTICS	+
		Rated speed rpm : 300
Aneroid pressure		+ rack travel mm : −8.60
hPa	: 1000	+ Tolerance mm : + 0.20
Rated speed rpm	: 1000	+ Del. quantity
Del. quantity	: 287.0	+ cm3/1000 strokes : 31.0
cm3/1000 strokes Tolerance	: 287.0	+ Tolerance + cm3/1000 strokes : +- 2.0
cm3/1000 strokes	: +- 3.0	Check tolerance
Check tolerance		+ cm3/1000s. : + 5.0
cm3/1000S.	: <del>+-</del> 6.0	+ Spreed
		+ Tolerance
Aneroid pressure		+ cm3/1000 strokes : 8.0
hPa	:	- Check tolerance
Rated speed rpm	: 500	+ cm3/1000s. : 12.0
Del. quantity	470.0	†
cm3/1000 strokes	: 138.0	†
Tolerance cm3/1000 strokes	: +- 5.0	İ
Check tolerance	, <del>-</del>	I
cm3/1000s	· + 8 N	1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 03.03.95

Test oil

: ISO 4113

Combination No.

: 0402746931

Injection pump

Pump designation : PES6P120A320RS7236

EP type number

: 0412726848

Governor

Governer design. : RQV275...1000PA1001

: -2

Governer no.

: 0421813989

Cust. part No. : CCEP5128A 66-194

Customer-spec. information

Customer

: RVI

Motor

: MIDR 063540 N/3

Power KW

: 283.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve

: 2417413071

40

Inlet press. bar :

2.5

Tolerance bar : +-

0.1

Test nozzle holde

assembly

: 1688901105

Opening pressure

bar

208.5

Tolerance bar

: <del>+-</del> 1.5

Lube oil

: 1409918004

Test lines

: 1680750089

J12

Outside diameter : 8.0

x inside diameter :

3.0

x length mm

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 4.55 : + - 0.05Tolerance mm

test only : + 0.10

Rack travel in mm: 19.50

: +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

: + 0.30Tolerance

Check

tolerance °NW : + - 0.75

#### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm

600

Rack travel in mm: -7.25

Tolerance mm	: <b>←</b> 0.30	+
Del. quantity cm3/1000 strokes	: 74.0	GUIDE
Tolerance cm3/1000 strokes	: + 1.0	t contro
Check tolerance cm3/1000s.	: + 4.0	+ positi + Rated
Spreed		+ Rack to Tolera
Tolerance cm3/1000 strokes	: 4.0	+
Check tolerance cm3/1000s.	: 7.0	Rated :
Rated speed rpm	: 600	+ hPa + Del. qu + cm3/100
Rack travel in mm Tolerance mm	: 13.35 : + 0.05	Tolerar - cm3/100 - Check 1 - cm3/100
Del. quantity cm3/1000 strokes	: 290.0	+ Spreed + Tolerar
Tolerance cm3/1000 strokes	: +- 2.0	+ cm3/100 + Check 1 + cm3/100
Check tolerance cm3/1000s.	: +- 5.0	RATED S
Spreed Tolerance cm3/1000 strokes	: 8.0	control positic
Check tolerance cm3/1000s.	: 12.0	rack tr
2nd speed rpm	: 300	+ Rated s + Tolerar
Rack travel in mm Tolerance mm Del. quantity	: +- 0.20	rack tr Rated s Tolerar
cm3/1000 strokes Tolerance cm3/1000 strokes	: 31.0 : ← 2.5	rack tr
Check tolerance cm3/1000s.	: <del>+</del> 5.0	Rated s
Spreed Tolerance cm3/1000 strokes	: 6.0	LOW IDL
Check tolerance cm3/1000s.	: 10.0	control
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	+ toleran + Testing

GUIDE SLEEVE POSI	TION
control lever position degree Rated speed rpm	: - 1 : 1190
Rack travel in mm Tolerance mm	: 13.20 : +- 1.30
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 600
hPa	: 1000
Del. quantity cm3/1000 strokes	: 290.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s. Spreed	: <del>+-</del> 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
RATED SPEED  control lever  cosition degree  tolerance degree	
rack travel mm Rated speed rpm Tolerance 1/min	: -1.00 : 1070 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: -9.30 : 1205 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: -12.85 : +- 0.55 : 1350
LOW IDLE	
control lever position degree colerance degree	: 247.0 : + 4.0
Testing:	

		1
Rated speed rpm	: 300	
rack travel mm	: -8.20	<pre>+ FUEL DELIVERY CHARACTERISTICS</pre>
Tolerance mm	: <b>←</b> 0.10	†
Datad aroad nam	, 200	Aneroid pressure
Rated speed rpm	: 200	+ hPa : 1000 + Rated speed rpm : 600
CRT mm max.	• < -6.80	Rated speed rpm : 600 Del. quantity
OILE IMP IIIQX	. \ 0.00	cm3/1000 strokes : 74.0
		Tolerance
CONTINUOUS-ACTION	N CONTROL	+ cm3/1000 strokes : + 1.0
		+ Check tolerance
Rated speed rpm	: 365	+ cm3/1000s. : + 4.0
		+ Spreed
TORQUE CONTROL		
TOTAGE CONTINOE		Check tolerance
Rated speed rpm	: 1000	+ cm3/1000s. : 7.0
Tolerance mm		+
		Aneroid pressure
Rated speed rpm	: 600_	† hPa : 1000
rack travel mm	: -4.50	Rated speed rpm : 1000
Tolerance mm	: <b>←</b> 0.10	+ Del. quantity + cm3/1000 strokes : 270.0
<del></del>		Tolerance
ANEROID/ALTITUDE		cm3/1000 strokes : + 4.0
COMPENSATOR TEST		+ Check tolerance
		+ cm3/1000s. : +- 7.0
		†
SETTING		+ Aneroid pressure
Dated aread non	. 500	+ hPa : 1000
Rated speed rpm Pressure hPa		+ Rated speed rpm : 600 + Del. quantity
ressure ma	. 1000	+ cm3/1000 strokes : 159.0
MEASUREMENT		+ Tolerance
		+ cm3/1000 strokes : +- 5.0
Pressure hPa	: -	+ Check tolerance
Rated speed rpm		+ cm3/1000s. : + 8.0
rack travel mm		+ Spreed
Tolerance mm	: +- 0.30	+ Tolerance + cm3/1000 strokes : 8.0
Rated speed rpm	: 500	Check tolerance
Marca opeca i piii	. 300	+ cm3/1000s. : 12.0
Pressure hPa	: 240	+
rack travel mm	: -2.60	+ Aneroid pressure
Tolerance mm	: +- 0.20	+ hPa : -
Danasina hDa	: 480	Rated speed rpm : 500
Pressure hPa rack travel mm	: +60	+ Del. quantity + cm3/1000 strokes : 167.0
Tolerance mm	: + 0.05	Tolerance
TO COT GITTO TIME	0.05	+ cm3/1000 strokes : +- 1.0
	<del> </del>	
START CUT-OUT		+ cm3/1000s. : +- 4.0
O. 4 . 4	. > 400	†
Rated speed rpm	: > 100	DDEAMAUAY
Check speed 1/min	: > 80	# BREAKAWAY
Rated speed rpm	: < 195	Ţ
Check	• • • • • • • • • • • • • • • • • • • •	+   Rack travel in mm : −1.00
speed 1/min	: < 215	+ Rated speed rpm : 1070

# LOW IDLE

Rated speed rpm 300 rack travel mm -8.20 Tolerance mm : **←** 0.20 Del. quantity cm3/1000 strokes : 31.0 Tolerance cm3/1000 strokes : +-2.5 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.03.95 Test oil : ISO 4113

Combination No. : 0402746949

Injection pump

Pump designation : PES6P120A720RS7224

: -2

EP type number : 0412726893

Governor

Governer design. : RQV275...1100PA975

: -3K

Governer no. : 0421815350

Cust. part No.

Customer-spec. information

: IVECO-FRANCE Customer : 8460.41.406 Motor

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1417413076

Inlet press. bar : : + 0.1Tolerance bar

Overflow quantity

140 min. L/h Tolerance l/h : +- 20.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

bar 208.5 Tolerance bar : +- 1.5 Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter: 3.0

600 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.15 : +- n.05 Tolerance mm

: +- 0.10 test only

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : + - 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 218.0	guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Tolerance + cm3/1000 strokes : + 1.0 +	CUIDE SIETHE POSTTION
Check tolerance cm3/1000s. : + 4.0	GUIDE SLEEVE POSITION
Spreed Tolerance	control lever position degree : - 1 Rated speed rpm : 1235
cm3/1000 strokes : 5.0	Rack travel in mm : 10.30
Check tolerance cm3/1000S. : 9.0	Tolerance mm : +- 2.50
2nd speed rpm : 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.30 Tolerance mm : + 0.20	Rated speed rpm : 1100 Aneroid pressure
Del. quantity cm3/1000 strokes : 30.0 Tolerance	hPa : 1200 Del. quantity cm3/1000 strokes : 218.0
cm3/1000 strokes : + 3.0 Check tolerance	Tolerance cm3/1000 strokes : + 1.0
cm3/1000s. : + 6.0 + 5preed	Check tolerance cm3/1000s. : +- 4.0
Tolerance + cm3/1000 strokes : 8.0 + Check tolerance + cm3/1000 strokes : 8.0 + cm3/1000 strokes	Spreed Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	Check tolerance cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	RATED SPEED
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 275 guide sleeve	position degree : 120.0 tolerance degree : +- 4.0
travel mm : 1.90 + Tolerance mm : + 0.20 +	rack travel mm : 11.70 Rated speed rpm : 1160
Rated speed rpm : 1145 guide sleeve	Tolerance 1/min : + 5 rack travel mm : 4.00
travel mm : 10.40 + Tolerance mm : +- 0.15	Rated speed rpm : 1245 Tolerance 1/min : + 15
Rated speed rpm : 750 + guide sleeve +	rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm : 6.10 Tolerance mm : + 0.25	Rated speed rpm : 1350
Rated speed rpm : 430 + guide sleeve +	LOW IDLE
travel mm : 3.60 Tolerance mm : + 0.25	control lever
Rated speed rpm : 1360	position degree : 74.0 tolerance degree : +- 4.0

Testing:
Rated speed rpm : 275 rack travel mm : 5.30 Tolerance mm : + 0.10
Rated speed rpm : 100
CRT mm min. : > 7.00
CONTINUOUS-ACTION CONTROL
Rated speed rpm : 335
TORQUE CONTROL
Rated speed rpm : 1100 rack travel mm : 12.75 Tolerance mm : + 0.05
Rated speed rpm : 900 rack travel mm : 12.75 Tolerance mm : + 0.10
Rated speed rpm : 650 rack travel mm : 12.00 Tolerance mm : + 0.10
Rated speed rpm : 300 rack travel mm : 11.20 Tolerance mm : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST
SETTING
Rated speed rpm : 900 Pressure hPa : 1200 rack travel mm : 12.75 Tolerance mm : + 0.05
MEASUREMENT
Pressure hPa : - Rated speed rpm : 900 rack travel mm : 7.40 Tolerance mm : + 0.20
Rated speed rpm : 900
Pressure hPa : 380 rack travel mm : 9.00 Tolerance mm : + 0.20

Pressure hPa rack travel mm Tolerance mm	: 710 : 11.50 : + 0.05
START CUT-OUT	
Rated speed rpm Check	: > 170
speed 1/min Rated speed rpm	: > 150 : < 220
Check speed 1/min	: < 240
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	4000
hPa Rated speed rpm Del. quantity	: 1200 : 900
cm3/1000 strokes	: 231.0
Tolerance cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance cm3/1000s.	: +- 6.0
Aneroid pressure hPa	: 1200
Rated speed rpm Del. quantity	: 650
cm3/1000 strokes Tolerance	: 238.0
cm3/1000 strokes Check tolerance	: <b>←</b> 3.0
cm3/1000s.	: +- 6.0
Aneroid pressure	
Rated speed rpm	: – : 650
Del. quantity cm3/1000 strokes	: 124.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 11.70 : 1160 : + 5
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100

Del. quantity cm3/1000 strokes : 140.0 Tolerance cm3/1000 strokes :  $\leftarrow$  15.0 Check tolerance

cm3/1000s. : + 19.0

# LOW IDLE

cm3/1000s.

Rated speed rpm 275 rack travel mm 5.30 Tolerance mm : **←** 0.20 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance

12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 06.03.95 Edition Test oil : ISO 4113

Combination No. : 0402746950

Injection pump

Pump designation: PES6P120A720RS7224

: -2

EP type number : 0412726893

Governor

Governer design. : RQV275...1100PA975

: -4K

Governer no. : 0421815351

Cust. part No. :

Customer-spec. information

: IVECO-FRANCE Customer : 8460.41.320 Motor

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1417413076

Inlet press. bar : Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 140 Tolerance 1/h : +- 20.0

Test nozzle holde

: 1688901105 assembly

Opening pressure

208.5 har : + 1.5 Tolerance bar

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0 600 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm 5.15 : +- 9.05 Tolerance mm

test only : **←** 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + - 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.45 Tolerance mm :  $\leftarrow$  0.05

Del. quantity	∔ guide sleeve
cm3/1000 strokes : 192.0	travel mm : 13.50
	Tolerance mm : + 0.50
Tolerance	1 Octor direct limit
cm3/1000 strokes : + 1.0	
110	GUIDE SLEEVE POSITION
Check tolerance	I GOIDE BEEEVE ! OBITION
cm3/1000s. : +- 4.0	$\mathbf{I}$
CIID/ 10003 F- 4.0	control lever
Chanal	
Spreed -	position degree : - 1
Tolerance -	Rated speed rpm : 1235
cm3/1000 strokes : 5.0	10.70
	Rack travel in mm: 10.30
Check tolerance -	Tolerance mm : +- 2.50
cm3/1000s. : 9.0 -	†
-	
2nd speed rpm : 275 -	FULL LOAD DELIVERY AT FULL LOAD STOP
•	+
Rack travel in mm: 5.70 -	Rated speed rpm : 1100
Tolerance mm : +- 0.20 -	Aneroid pressure
Del. quantity -	hPa : 1200
cm3/1000 strokes : 30.0	Del. quantity
Tolerance -	cm3/1000 strokes : 192.0
cm3/1000 strokes : +- 3.0 -	Tolerance
Check tolerance	cm3/1000 strokes : + 1.0
cm3/1000s. : +- 6.0	
	Check tolerance
Spreed -	cm3/1000s. : + 4.0
Tolerance	Spreed
cm3/1000 strokes : 8.0 -	Tolerance
Check tolerance	cm3/1000 strokes : 5.0
cm3/1000s. : 12.0 -	f Check tolerance
<del>-</del>	cm3/1000s. : 9.0
-	<del> </del>
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	RATED SPEED
-	-
GUIDE SLEEVE TRAVEL	control lever
,	position degree : 120.0
Rated speed rpm : 275	tolerance degree : +- 4.0
guide sleeve	
travel mm : 1.90	rack travel mm : 10.40
Tolerance mm : + 0.20	Rated speed rpm : 1170
19691 0100 11011	Tolerance 1/min : +- 5
Rated speed rpm : 1145	
	rack travel mm : 4.00
guide sleeve + travel mm : 10.40	
Tolerance mm : +- 0.15	Tolerance 1/min : +- 15
750	
Rated speed rpm : 750	rack travel mm : 0.50
guide sleeve	- Tolerance mm : +- 0.50
guide sleeve travel mm : 6.10	
guide sleeve	- Tolerance mm : +- 0.50
guide sleeve travel mm : 6.10	- Tolerance mm : +- 0.50
guide sleeve travel mm : 6.10 Tolerance mm : +- 0.25	- Tolerance mm : +- 0.50
guide sleeve travel mm : 6.10 Tolerance mm : +- 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1350
guide sleeve travel mm : 6.10 Tolerance mm : +- 0.25  Rated speed rpm : 430 guide sleeve	Tolerance mm : + 0.50 Rated speed rpm : 1350
guide sleeve travel mm : 6.10 Tolerance mm : +- 0.25  Rated speed rpm : 430 guide sleeve travel mm : 3.60	Tolerance mm : + 0.50 Rated speed rpm : 1350 LOW IDLE
guide sleeve travel mm : 6.10 Tolerance mm : +- 0.25  Rated speed rpm : 430 guide sleeve travel mm : 3.60	Tolerance mm : + 0.50 Rated speed rpm : 1350 LOW IDLE control lever
guide sleeve travel mm : 6.10 Tolerance mm : + 0.25  Rated speed rpm : 430 guide sleeve travel mm : 3.60 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1350  LOW IDLE  control lever position degree : 73.0
guide sleeve travel mm : 6.10 Tolerance mm : +- 0.25  Rated speed rpm : 430 guide sleeve travel mm : 3.60	Tolerance mm : + 0.50 Rated speed rpm : 1350 LOW IDLE control lever

# Testing:

Rated speed rpm 275 rack travel mm 5.70 Tolerance mm : +- 0.10

100 Rated speed rpm

CRT mm min. : > 7.20

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

#### TORQUE CONTROL

Rated speed rpm 1100 11.45 rack travel mm : +- 0.05 Tolerance mm

Rated speed rpm 900 rack travel mm 11.10 Tolerance mm : + 0.10

650 Rated speed rpm : rack travel mm 10.20 Tolerance mm : + 0.15

Rated speed rpm 400 rack travel mm 9.60 Tolerance mm : + 0.20

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100 Pressure hPa 1200 11.45 rack travel mm Tolerance mm : +- 0.05

# **MEASUREMENT**

Pressure hPa Rated speed rpm 1100 7.80 rack travel mm Tolerance mm : + 0.20

Rated speed rpm 1100

340 Pressure hPa 8.70 rack travel mm Tolerance mm : +- 0.20

Pressure hPa 570 10.55 rack travel mm Tolerance mm : + 0.05

#### START CUT-OUT

Rated speed rpm 170 : > Check : > speed 1/min 150 : < Rated speed rpm 220 Check speed 1/min : < 240

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 1200 Rated speed rpm 900 Del. quantity

cm3/1000 strokes : 189.0

Tolerance

cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0

Aneroid pressure

hPa 1200 Rated speed rpm 650 Del. quantity

cm3/1000 strokes : 185.0

Tolerance cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s. 6.0

Aneroid pressure

hPa Rated speed rpm 650

Del. quantity

cm3/1000 strokes : 127.0 Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. : +-4.0

#### BREAKAWAY

Rack travel in mm: 10.40 Rated speed rpm : 1170 Tolerance 1/min

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 140.0 Tolerance cm3/1000 strokes : + 15.0 Check tolerance

cm3/1000s. : + 19.0

cm5/10005. : 7- 19.6

# LOW IDLE

Rated speed rpm 275 rack travel mm 5.70 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.03.95 Edition Test oil : ISO 4113

Combination No. : 0403274005

## Injection pump

Pump designation : PES4MW100/720RS1519

: -2

EP type number : 0413204017

#### Governor

Governer design. : RSV350...1200MW0A356

Governer no. : 0420085231

Cust. part No. : 0250740802

Customer-spec. information : MB-NFZ Customer : 0M364LA Motor Power KW : 103.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde

: 1688901101 assembly

Opening pressure

208.5 Tolerance bar

Test lines : 1680750089

Outside diameter : 8.0 x inside diameter: 3.0 x length mm 600 :

#### REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 51.0 Tolerance bar : + 1.0

Prestroke mm 4.55 Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm: 21.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : ← 0.50

Check

tolerance °NW : + - 0.75

#### BASIC SETTING

Rated speed rpm 1200

Rack travel in mm: 13.90 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 126.0

Tolerance cm3/1000 strokes : +- 1.0	+ Check tolerance + cm3/1000s. : + 4.0 + Spreed
Check tolerance cm3/1000s. : + 4.0	Tolerance cm3/1000 strokes : 5.0
Spreed Tolerance	Check tolerance cm3/1000s. : 8.0
cm3/1000 strokes : 5.0	RATED SPEED
Check tolerance cm3/1000s. : 8.0	
2nd speed rpm : 350	control lever position degree : 108.0
Deals through the man at 7.00	tolerance degree : +- 4.0
Rack travel in mm : 3.90 Tolerance mm : +- 0.20	nock though an a 1 00
Del. quantity	+ rack travel mm : 1.00 + Tolerance mm : + 0.70
cm3/1000 strokes : 12.0	+ Rated speed rpm : 1450
Tolerance	Traced opeca (piii : 1450
cm3/1000 strokes : + 2.0	+ rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1355
cm3/1000s. : +- 4.5	+
Spreed	+
Tolerance	+ LOW IDLE
cm3/1000 strokes : 2.0	† • • • • • • • • • • • • • • • • • • •
Check tolerance	+ Setting point w/out bum-ar spring
cm3/1000s. : 4.0	+ Rated speed rpm : 350
	+ Rated speed rpm : 350 + rack travel mm : 3.90
(B) SETTING OF INJECTION PUMP	Tack cravet iiiii . 5.70
WITH GOVERNOR	Testing:
	+
	+ Rated speed rpm : 100
GUIDE SLEEVE POSITION	CRT mm min. : > 19.00
•	†
control lever	TORQUE CONTROL
position degree : - 3	TONGOE CONTROL
Rated speed rpm : 800	Rated speed rpm : 1200
	rack travel mm : 13.90
Rack travel in mm: 0.50	Tolerance mm : + 0.05
Tolerance mm : + 0.20	+
	Rated speed rpm : 750
governor spring	rack travel mm : 13.90
pre-tension -	Tolerance mm : + 0.10
click setting $x$ : 4.50	†
	ANEROID/ALTITUDE
FULL LOAD DELIVERY AT FULL LOAD STOP	COMPENSATOR TEST
Rated speed rpm : 1200 -	+
Aneroid pressure	+ SETTING
hPa : 1000 - Del. quantity -	Rated speed rpm : 500
cm3/1000 strokes : 126.0	+ Pressure hPa : 1000
Tolerance -	rack travel mm : 13.90
cm3/1000 strokes : + 1.0	Tolerance mm : + 0.10

# **MEASUREMENT**

Pressure hPa	:	
Rated speed rpm	:	500
Tolerance mm	: +	- 0.10

# Rated speed rpm : 500

Pressure hPa	:	600
rack travel mm	:	2.00
Tolerance mm	: +	- 0.10

Pressure hPa	:	350
rack travel mm	:	0.50
Tolerance mm	: +	- 0.10

# FUEL DELIVERY CHARACTERISTICS

	pressure		40
hPa		•	10

:	1000
:	750
:	124.0
	:

loterance		
cm3/1000 strokes	: +-	2.0
Check tolerance		

# Check tolerance cm3/1000s. : + 5.0 Spreed

Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000s.	:	9.0

# Aneroid pressure

Aneroia pressure		
hPa	:	_
Rated speed rpm	:	<b>500</b>
Del. quantity cm3/1000 strokes	:	67.0
Tolerance		

loterance		
cm3/1000 strokes	: +-	1.0
Check tolerance		

# cm3/1000s. : +- 3.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	150.0
Tolerance cm3/1000 strokes	: +-	. 5.0
Check tolerance	• +	8.0

# LOW IDLE

Rated speed rpm	:		350
rack travel mm	:		3.90
Tolerance mm	:	+-	0.20
Del. quantity			
cm3/1000 strokes	:		12.0
Tolerance			
cm3/1000 strokes	:	+	2.0
Check tolerance			
cm3/1000s.	:	+-	4.5
Spreed			
Tolerance			
cm3/1000 strokes	:		2.0
Check tolerance			
cm3/1000s.	:		4.0

Note inst. in remarks column

Test scheet : VMA 1,7 A Edition : 18.02.91

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE3/10F2100L353 Type number : 0 460 403 013

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : HR 392 SHJ

TEST BENCH REQUIREMENTS

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening

Pressure> bar: 147.00...150.00

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 0,4

> (from BDC): 0,02(0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000

Setting value mm: 2.10...2.50

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000

Setting value bar: 4.20...4.80

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500 Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 65.00...66.00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 750

Del. quantity cm3/

> 1000s.: 46.10...47.10

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 460

Del. quantity cm3/

> 1000s.: 8.50...12.50

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 > 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2300 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 34.00...40.00

Start:

Speed 1/min: 100

Del. quantity cm3/: 35.00...61.00

mind> 1000s.: 35.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500 Charge press hPa: 1000

Inj.-qty. cm3/

difference> 1000S.: 10.00...12.00

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1.Speed 1/min: 1500 Charge press hPa: 1000

TD-travel

difference> mm: 0.30...0.50 Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 SP press.-dif.measurement Overlow quantity at overflow valve: 1/min: 1500 1.Speed 1st speed 1/min: 600 hPa: 1000 Charge press Shutoff Supply pump electromagnet>Volt: 12 pressure> : 41.70...83.40 Overflow difference> bar: 0.10...0.30 cm3/10s: (26.70...98.40) quantity> Shutoff 2nd speed 1/min: 2100 electromagnet Volt: 12 Charge press. hPa: 1000 Shutoff Inspection-pump test specifications electromagnet>Volt: 12 Test specifications in parentheses : 55.60...139.00 Overflow quantity> cm3/10s: (40.60...154.00) Timing-device characteristic: Delivery-quant. and breakaway char.: 2nd speed 1/min: 2100 hPa: 1000 Charge press mm: 6.10...6.90 1/min: 750\* TD travel 1nd speed mm: (5.80...7.20) Charge-air pressure-setting Shutoff point> hPa: 350 electromagnet>Volt: 12 LDA-stroke mm: 6.2 1/min: 1000 3rd speed Shutoff hPa: 1000 electromagnet>Volt: 12 Charge press Del. quantity cm3/: 55.50...56.50 mm: 2.10...2.50 TD travel > mm: (1.60...3.00) 1000s.: (53.50...58.50) > 1/min: 2500 Shutoff 3rd speed electromagnet>Volt: 12 Charge press. hPa: 1000 1/min: 1900 Shutoff 5th speed Charge rress. hPa: 1000 electromagnet>Volt: 12 mm: 5.40...6.20 Del. quantity cm3/: 0.00...6.00 TD travel > mm: (5.10...6.50) 1000s.: -Shutoff 5th speed 1/min: 2300 Charge press. hPa: 1000 electromagnet>Volt: 12 6th speed 1/min: 1500 Charge press. hPa: 1000 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 34.00...40.00 mm: 3.90...4.70 TD travel mm: (3.60...5.00) 1000s.: (33.00...41.00) 9th speed 1/min: 2100 Shutoff electromagnet>Volt: 12 Charge press. hPa: 1000 Shutoff Supply-pump pressure characteristic: electromagnet>Volt: 12 Del. quantity cm3/: 55.20...57.60 > 1000s.: (54.20...58.80) 1/min: 2100 1st speed Charge press. hPa: 1000 1/min: 750 11th speed Supply-pump Charge press. hPa: 1000 bar: 7.90...8.50 Shutoff pressure> Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 Del. quantity cm3/: 60.50...63.50 1000s.: (59.50...64.50) 2nd speed 1/min: 1000 1/min: 1500 Charge press. hPa: 1000 12th speed Charge press. hPa: 1000 Supply-pump pressure> bar: 4.20...4.80 Shutoff Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 65.00...66.00 electromagnet>Volt: 12 3rd speed 1/min: 600 1000s.: (63.50...67.50) 18th speed Supply-pump 1/min: 750 bar: 2.30...2.90 Shutoff pressure>

electromagnet>Volt:	: 12	+	Shutoff		
Del. quantity cm3/:	46.1047.10	+	electromagnet>	Volt:	12
	(44.1049.10)	+	_		
20th speed 1/min:	: 600	†	SP pressdif.		
Shutoff	42	+	pompa di mandat		
electromagnet>Volt:		†	1st speed 1/		
Del. quantity cm3/:		+	2nd speed 1/		
/ 10005.:	(40.0046.00)	Ť	Charge press.	nra:	1000
		T	Supply pump-		0.100.30
		I	<pre>pressure &gt; difference&gt;</pre>		(0.100.30)
Electr. shutoff:		I	Shutoff	Dar.	(0.100.30)
eccour. Silatorr.		$\mathbf{I}$	electromagnet>\	/nl+•	12
ist speed 1/min:	460	1	c cccti omagnets i	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	12
Del. quantity cm3/:		1	Automatic start	ina	fuel delivery:
	(0.003.00)	1	, and a second of the second o	5	
, , , , , , , , , , , , , , , , , , , ,		1	1st speed 1/	min:	350
Idle delivery:		1	Shutoff		
•		+	electromagnet>\	olt:	12
1st speed 1/min:	460	+	Del. quantity of		
Shutoff		+			(42.0068.00)
electromagnet>Volt:		+			
Del. quantity cm3/:		+	4th speed 1/	min:	100
	(6.5014.50)	+	Shutoff		·
Dispersion cm3/:		+	electromagnet>V	Olt:	12
> 1000s.:		+	Del. quantity o		
2nd speed 1/min:	500	+	> 100	10s.:	(35 10.,.61.00)
Shutoff		+			
electromagnet>Volt:		+	Shutoff electro	magn	et:
Del. quantity cm3/:		+			
	(2.0012.00)	+	Cut-in		
3rd speed 1/min:	600	†	>min voltage		10,0
Shutoff	12	†	Rated voltage	:	12,0
electromagnet>Volt:	72	†	<b>98</b> - 1 - 1 - 2 - 1 - 1 - 1 - 1	1.	
Del. quantity cm3/:		†	Mounting and as	semb	Ly dimensions:
> 1000s.:	(0.007.00)	1	Dani maki sa		
Lond domandont otom	t of dolfwore	Ť	Designation		
Load-dependent star		T	K KF	mm:	
Injqty.dif.measur	emeric:	T	MS	mm:	5,66,0
2nd speed 1/min:	1500	T	SVS max.		0,61,0
	1000	T	LDA stroke		0,8 6,2
	10.0012.00	I	LUM SCIUNE	((8)).	0,2
difference> 1000S.:		I	Remarks:		
Shutoff	(10.00.1112.00)	1	Kellar Ko.	•	12
electromagnet Volt:	12	1		:	50 (6.5014.50) 3
4th speed 1/min:		1		•	
Charge press. hPa:		1			
	15.0021.00	1			
difference> 1000S.:	(15.0021.00)	+			
Shutoff		+			
<pre>electromagnet&gt;Volt:</pre>	12	+			
		+			
TD-travel dif.measu		+			
correttore anticipo		+			
1st speed 1/min:		+			
2nd speed 1/min:		+			
	1000	+			
	0.300.50	†			
difference> mm:	(0.300.50)	+			

Note inst. in remarks column

Test scheet : CAS 2,5 D Edition : 18.02.91

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE3/10F1100R276-3
Type number : 0 460 403 014

Customer Part-No. : 1 967 077 C1

Customer-specific information

Customer : CASE

Engine : 0155/440

TEST BENCH REQUIREMENTS

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 020

0pening

Pressure> bar: 172.00...175.00

Perforated-plate

diameter> mm: 0.6

Test inj. tubing : 1 688 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Start of delivery block Piston stroke mm: 1,0

> mm: 0,98...1,02

Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 800

Setting value mm: 2.20...2.60

Supply-pump pressure

Speed 1/min: 800

Setting value bar: 4.00...4.60

Full-load del. w/out charge press.:

Speed 1/min: 800

Del. quantity cm3/

> 1000s.: 61.00...62.00

Dispersion cm3/: 2,5 > 1000s.: (3.5)

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

> 1000s.: 13.00...17.00

Full-load speed regulation

Speed 1/min: 1150

Del. quantity cm3/

> 1000s.: 41......47.00

Start:

Speed 1/min: 100

Del. quantity cm3/: 75.00...125.00

mind> 1000s.: 75.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1050

TD travel mm: 3.30...4.10

> imm: (3.00...4.40)
3rd speed 1/min: 800

TD travel mm: 1.90...2.30

> mm: (1.40...2.80)

4th speed 1/min: 600

TD travel mm: 0.30...1.10

> mm: (0.00...1.40)

Supply-pump pressure characteristic:

1st speed 1/min: 500

Supply-pump

pressure> bar: 2.90...3.50

2nd speed 1/min: 800

Supply-pump

pressure> bar: 4.00...4.60

3rd speed 1/min: 1050

Supply-pump

bar: 4.80...5.40 pressure> Overlow quantity at overflow valve: 1/min: 500 1st speed Overflow : 41.70...83.40 cm3/10s: (26.70...98.40) quantity> 1/min: 1050 2nd speed Overflow : 55.60...139.00 quantity> cm3/10s: (40.60...154.00) Delivery-quant. and breakaway char.: 1/min: 1250 2nd speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1/min: 1230 3rd speed Del. quantity cm3/: 0.00...10.00 1000s.: (0.00...10.00) 1/min: 1180 4th speed Del. quantity cm3/: 10.00...40.00 > 1000s.: (10.00...40.00) 5th speed 1/min: 1150 Del. quantity cm3/: 41.00...47.00 1000s.: (39.50...48.50) 9th speed 1/min: 1050 Del. quantity cm3/: 60.50...63.50 1000s.: (59.50...64.50) 1/min: 800 12th speed Del. quantity cm3/: 61.00...62.00 1000s.: (59.20...63.80) 20th speed 1/min: 500 Del. quantity cm3/: 57.00...61.00 1000s.: (56.00...62.00) Mech. shutoff: 1st speed 1/min: 1050 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Idle delivery: 1st speed 1/min: 350 Del. quantity cm3/: 13.00...17.00 1000s.: (11.00...19.00) cm3/: 2.5 Dispersion 1000s.: (3.5) 1/min: 450 2nd speed Del. quantity cm3/: 0.00...4.00 1000s.: (0.00...4.00) Automatic starting fuel delivery: 1st speed 1/min: 300 Del. quantity cm3/: 80.00...110.00

1000s.: (80.00...110.00)

2nd speed 1/min: 400 Del. quantity cm3/: 60.00...80.00 1000s.: (60.00...80.00) 4th speed 1/min: 100 Del. quantity cm3/: 75.00...125.00 1000s.: (75.00...125.00) Mounting and assembly dimensions: Designation K mm: 3,2...3,4 KF mm: 5,1...5,3 MS mm: 1,1...1,5 SVS max. mm: 4,9 Remarks: : .00(11.00...19.00)2.

Note inst. in remarks column

Test scheet : VMA

Edition : 03.12.92

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE3/10F1500L483 Type number : 0 460 403 016

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : HR 394 H

Power KW: 39

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening |

Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

x Length> mm: 450

Start of delivery

Prestroke mm: -

> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

Setting value mm: 2.50...2.90

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200

Setting value bar: 5.30...5.90

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Dispersion cm3/: 3.5 > 1000s.: (3.5)

Full-load del. w/out charge press.:

Speed 1/min: 1200

Del. quantity cm3/

> 1000s.: 44.00...45.00

Shutoff

electromagnet>Volt: 12.0 Dispersion cm3/: 3.5 > 1000s.: (3.5)

Low-idle speed regulation

Speed 1/min: 460

Del. quantity cm3/

> 1000s.: 10.50...14.50

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 > 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1620

Del. quantity cm3/

> 1000s.: 21.00...27.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.00...100.00

mind> 1000s.: 60.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1200

Inj.-qty. cm3/

difference> 1000s.: 15.00...17.00 #

Shutoff

electromagnet>Volt: 12 SP press.-dif.measurement

1.Speed 1/min: 1200

Supply pump

pressure> difference> bar: 0.10	00.30 #		/min:	1700
Shutoff	J #	Shutoff electromagnet	Vol+-	12
electromagnet Volt: 12.0	$_{I}$	Del. quantity		
	1			(0.003.00)
Inspection pump test spe	ecifications +	5th speed 1		
Test specifications in p		Shutoff	.,,	
	+	electromagnet>		
Timing-device characteri	istic: +	Del. quantity		
2004 000004 4/0000 4500	, †			(18.0030.00)
2nd speed 1/min: 1500 TD travel mm: 3.60	1 40		/min:	1550
> mm: (3.3	304.70)	Shutoff electromagnet>	Val֥	12
Shutoff	1	Del. quantity	rm3/:	37 00 47 00
electromagnet>Volt: 12	1	> 100	00s.:	(36.0048.00)
3rd speed 1/min: 1200	) 1	9th speed 1		
TD travel mm: 2.50	J2.90 }	Shutoff		
> mm: (2.0	)03.40) <del> </del>	electromagnet>		
Shutoff	†	Del. quantity		
electromagnet>Volt: 12	, †			(42.0048.00)
4th speed 1/min: 1000 TD travel mm: 1.30	7	12th speed 1	/min:	1200
	102.40)	Shutoff electromagnet>\	101+	<b>4</b> ን
Shutoff	I	Del. quantity		
electromagnet>Volt: 12	1			(42.0047.00)
	1	20th speed 1		
Supply-pump pressure cha	aracteristic:	Shutoff		
	+	electromagnet>\		
2nd speed 1/min: 600	+	Del. quantity of		
Supply-pump	· - /- †	> 100	DOS.:	(44.0050.00)
pressure> bar: 2.80	13.40			
Shutoff electromagnet>Volt: 12	1			
3rd speed 1/min: 1200	ı	Electr. shutof1	F•	
Supply-pump	´	Eccer. Sharon	•	
pressure> bar: 5.30	)5.90	1st speed 1/	min:	400
Shutoff	+	Del. quantity of		
electromagnet>Volt: 12	+		00s.:	(0.003.00)
4th speed 1/min: 1500	+	Shutoff		
Supply-pump	, , , , , , , , , , , , , , , , , , ,	electromagnet>v	olt:	-
pressure>        bar: 6.60 Shutoff	17.20	Idle delivery:		
electromagnet>Volt: 12	Ī	idle delivery:		
etest magnet vote. 12	1	1st speed 1/	min:	46N
Overlow quantity at over	flow valve:	Shutoff		,,,,
•	+	electromagnet>V	olt:	12
1st speed 1/min: 600	+	Del. quantity o		
Shutoff	+			(8.5016.50)
electromagnet>Volt: 12	<b>+</b>		:m3/; 3	
	083.40		0s.:	
quantity> cm3/10s: (26. 2nd speed		2nd speed 1/ Shutoff	min:	550
Shutoff	I	electromagnet>V	olt:	12
electromagnet>Volt: 12	1	Del. quantity c		
Overflow: 55.50	0138.80			(0.003.00)
quantity> cm3/10s: (40.		3rd speed 1/	min:	
•	+	Shutoff		
Delivery—quant. and breal	kaway char.:	electromagnet>V		
	†	Del. quantity c		
	+	> 100	US.:	(1.009.00)

```
Load-dependent start of delivery:
Inj.-qty.dif.measurement:
             1/min: 1200
1st speed
Inj.-qty. cm3/ : 18.0...26.0 '
difference> 1000s.: -
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement:
correttore anticipo iniezione (SV):
             1/min: 1200
1st speed
TD-travel
                  : 0.80...1.00 '
difference>
                 mm: -
Shutoff
electromagnet>Volt: 12
Automatic starting fuel delivery:
1st speed
              1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 65.00...95.00
             1000s.: (65.00...95.00)
             1/min: 500
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...55.00
> 1000s.: (35.00...55.00)
4th speed
             1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...100.00
             1000s.: (60.00...100.00)
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                  : 12.0
Mounting and assembly dimensions:
Designation
                mm: 3.2...3.4
K
KF
                mm: 5.8...6.2
MS
                mm: 0.6...1.0
SVS max.
                mm: 2.8
                mm: 38.2 + -2
Ya
                mm: 55.5 +-4.1
Yb
Remarks:
                                    ...14
                  : .50(8.50...16.50) 3.
```

Note inst. in remarks column

Test scheet : VMA

Edition : 09.07.92 Calibrating oil : ISO-4113

Injection pump : VE3/10F1600L483 Type number : 0 460 403 016

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : HR 394 H

Power KW: 39

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40...48 Electronically> : 42...50

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening

Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

Setting value mm: 2.50...2.90

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200

Setting value bar: 5.30...5.90

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200

Del. quantity cm3/

> 1000s.: 45.50...46.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.5 > 1000s.: (3.5)

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

> 1000s.: 10.50...14.50

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 > 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1620

Del. quantity cm3/

1000s.: 21.00...27.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.00...100.00

mind> 1000s.: 60.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1209 Charge press hPa: 12

Inj.-qty. cm3/

difference> 1000s.: -18.00...26.00\*

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1.Speed 1/min: 1200

TD-travel

difference> mm: -0.80...1.00\*

Shutoff

electromagnet>Volt: 12 SP press.-dif.measurement

1.Speed 1/min: 1200

Supply pump

pressure>

difference> bar: -0.10...0.30#

Shutoff electromagnet Volt: 12	+ electromagnet Volt: 12 + Del. quantity cm3/: 0.003.00 + > 1000s.: (0.003.00)
Inspection-pump test specifications Test specifications in parentheses	5th speed 1/min: 1620 Shutoff
Timing-device characteristic:	+ electromagnet>Volt: 12 + Del. quantity cm3/: 21.0027.00 > 10008:: (18.0030.00)
2nd speed	8th speed 1/min: 1550 Shutoff
> mm: (3.304.70) Shutoff	<pre>electromagnet&gt;Volt: 12</pre>
electromagnet>Volt: 12 3rd speed	+ > 1000s.: (36.0048.00) + 9th speed 1/min: 1500 + Shutoff
> mm: (2.003.40) Shutoff	electromagnet>Volt: 12 Del. quantity cm3/: 44.0047.00
electromagnet>Volt: 12 4th speed	+ > 1000s.: (42.5048.50) + 12th speed 1/min: 1200 + Shutoff
> mm: (1.002.40) Shutoff	+ electromagnet>Volt: 12 + Del. quantity cm3/: 45.5046.50
electromagnet>Volt: 12 Supply-pump pressure characteristic:	+ > 1000s.: (43.5048.50) + 20th speed 1/min: 600 + Shutoff
1st speed 1/min: 600	+ electromagnet>Volt: 12 + Del. quantity cm3/: 46.0049.00 > 1000s: (44.50.50.50)
Supply-pump pressure> bar: 2.803.40	† > 1000s.: (44.5050.50)
Shutoff	+
electromagnet>Volt: 12 3rd speed	+ + Electr. shutoff:
electromagnet>Volt: 12	+ 1st speed 1/min: 400
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)  Idle delivery:
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12	1st speed 1/min: 400  Del. quantity cm3/: 0.003.00  > 1000S.: (0.003.00)  Idle delivery:  1st speed 1/min: 400  Shutoff electromagnet>Volt: 12
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve:	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000S.: (0.003.00)  Idle delivery:  1st speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 10.5014.50 > 1000S.: (8.5016.50)
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 600 Shutoff electromagnet>Volt: 12	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)  Idle delivery:  1st speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 10.5014.50 > 1000s.: (8.5016.50) Dispersion cm3/: 3.5 > 1000s.: (3.5) 2nd speed 1/min: 550
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 600 Shutoff electromagnet>Volt: 12  Overflow quantity at overflow valve:  1st speed 1/min: 600 Shutoff electromagnet>Volt: 12 Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40)	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)  Idle delivery:  1st speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 10.5014.50 > 1000s.: (8.5016.50) Dispersion cm3/: 3.5 > 1000s.: (3.5) 2nd speed 1/min: 550 Shutoff electromagnet>Volt: 12
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 600 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 1500 Shutoff electromagnet>Volt: 12	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000S.: (0.003.00)  Idle delivery:  1st speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 10.5014.50 > 1000S.: (8.5016.50) Dispersion cm3/: 3.5 > 1000S.: (3.5) 2nd speed 1/min: 550 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000S.: (0.003.00) 3rd speed 1/min: 440
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 600 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 1500 Shutoff	1st speed 1/min: 400  Del. quantity cm3/: 0.003.00  > 1000S.: (0.003.00)  Idle delivery:  1st speed 1/min: 400  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10.5014.50  > 1000S.: (8.5016.50)  Dispersion cm3/: 3.5  > 1000S.: (3.5)  2nd speed 1/min: 550  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.003.00  > 1000S.: (0.003.00)  3rd speed 1/min: 440  Shutoff electromagnet>Volt: 12
electromagnet>Volt: 12 3rd speed 1/min: 1200 Supply-pump pressure> bar: 5.305.90 Shutoff electromagnet>Volt: 12 4th speed 1/min: 1500 Supply-pump pressure> bar: 6.607.20 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 600 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 1500 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00 > 1000S.: (0.003.00)  Idle delivery:  1st speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 10.5014.50 > 1000S.: (8.5016.50) Dispersion cm3/: 3.5 > 1000S.: (3.5) 2nd speed 1/min: 550 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000S.: (0.003.00) 3rd speed 1/min: 440 Shutoff

1st speed 1/min: 1200 : -15.0..17.0# Inj.-aty. cm3/ difference> 1000S.: 🚁 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 1200 cm3/: -18.0..26.0\* Inj.-gty. difference> 1000S.: -Shutoff electromagnet>Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1200 : -0.80...1.00\* TD-travel difference> mm: -Shutoff electromagnet>Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1/min: 1200 1st speed Supply pumppressure > : -0.10...0.30# difference> bar: -Shutoff electromagnet>Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 65.00...95.00 1000S.: (65.00...95.00) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 35.00...55.00 1000s.: (35.00...55.00) 4th speed 1/min: 100 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 60.00...100.00 1000s.: (60.00...100.00) Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.2...3.4 K KF mm: 5.8...6.2

mm: 0.6...1.0

Ya mm: 37.2...39.2 Yb mm: 51.5...59.7

Remarks:

: ...14 : .50(8.50...16.50) 3.

K09

MS

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VMA : 02.06.92 Edition replaces : 07.84 : ISO4113 Calibrating oil Injection pump : VE4/10F1900L106 Type number : 0 460 404 026 Customer-specific information : VM MOTORI Customer Engine : HR 492 HT9 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer>: 40...48 Electronically> : 42...50 Inlet press., bar: 0.35 Calibrating nozzle-holder : 1 688 901 000 assembly> Opening bar: 147...150 Pressure> Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1600 Charge press. hPa: 750 Setting value mm: 5.10...5.50 Supply-pump pressure

Full-load del. with charge press.: 1/min: 1600 Speed Charge press. hPa: 750 Del. quantity cm3/ 1000s.: 47.00...48.00 cm3/: 3.0 Dispersion 1000s.: -> Full-load del. w/out charge press.: Speed 1/min: 600 Del. quantity cm3/ > 1000s.: 32.00...35.00 Low-idle speed regulation Speed 1/min: 350 Charge press hPa: -Del. quantity cm3/ > 1000s.: 16.00...20.00 Del. quantity cm3/: 2.5 1000s.: -Full-load speed regulation 1/min: 190L Speed Charge press hPa: 750 Del. quantity cm3/ 1000s.: 43.50...46.50 Start: 1/min: 100 Charge press hPa: -Del. quantity cm3/: mind> 1000s.: 65.00 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 1000 1st speed Charge press hPa: 750 mm: 1.00...1.80 TD travel mm: (0.70...2.10) 2nd speed 1/min: 1600 Charge press hPa: 750 TD travel mm: 5.10...5.50 mm: (4.60...6.00) 3rd speed 1/min: 1900 Charge press hPa: 750 TD travel mm: 6.70...7.50 mm: (6.40...7.80) Supply-pump pressure characteristic:

1/min: 400

1st speed

Speed

1/min: 1600

Setting value bar: 5.50...6.10

Charge press hPa: 750

Charge press. hPa: 750 Mech. shutoff: Supply-pump pressure> bar: 1.50...2.10 1st speed 1/min: 1900 2nd speed 1/min: 1600 Charge press. hPa: 750 Idle delivery: Supply-pump pressure> bar: 5.50...6.10 1st speed 1/min: 350 1/min: 1900 Del. quantity cm3/: 16.00...20.00 3rd speed Charge press. hPa: 750 1000s.: 14.00...22.00 Supply-pump Dispersion cm3/: 2.5pressure> bar: 6.80...7.40 1000s.: -2nd speed 1/min: 430 Del. quantity cm3/: 2.60... Overlow quantity at overflow valve: 1000s.: -1/min: 500 1st speed 3rd speed 1/min: 500 : 55.50...111.10 Overflow Del. quantity cm3/: ...1.00 cm3/10s: (40.50...126.10) quantity> 1000s.: -1/min: 1900 2nd speed : 55.50...111.10 Overflow Automatic starting fuel delivery: quantity> cm3/10s: (40.50...126.10) 1st speed 1/min: 350 Del. quantity cm3/: 48.00... Delivery-quant. and breakaway char.: 1000s.: -1/min: 750 1nd speed 1/min: 450 2nd speed Charge-air pressure-setting Del. quantity cm3/: ...47.50 point> hPa: 300 mm: 4.2 LDA-stroke Shutoff electromagnet: Del. quantity cm3/: 41.50...44.50 1000s.: (40.00...46.00) Cut-in > 2nd speed 1/min: 2100 Charge press. hPa: 750 >min voltage : 10.0 Rated voltage : 12.0 Del. quantity cm3/: ...1.00 1000s.: -> Mounting and assembly dimensions: 1/min: 2050 3rd speed Charge press. hPa: 750 Designation Del. quantity cm3/: 2.00... mm: 3.2...3.4 1000s.: -KF mm: 5.7...6.0 1/min: 2030 mm: 1.4...1.6 4th speed MS Charge press. hPa: 750 SVS max. mm: 3.6 Del. quantity cm3/: 17.00...23.00 mm: 20.2...22.2 XK 1000s.: (16.00...24.00) mm: 14.2...17.6 XL 1/min: 1900 mm: 37.2...39.2 5th speed Ya Charge press. hPa: 750 Yb mm: 55.7...63.5 Del. quantity cm3/: 43.50...46.50 1000s.: (41.00...49.00) Remarks: 1/min: 1600 : .0014.00...22.00 2. 6th speed Charge press. hPa: Del. quantity cm3/: 31.00...34.00 1000s.: (29.80...35.20) 1/min: 1600 7th speed Charge press. hPa: 750 Del. quantity cm3/: 47.00...48.00 1000s.: (44.80...50.20) 1/min: 600 8th speed Charge press. hPa: -Del. quantity cm3/: 32.00...35.00 1000s.: (30.50...36.50)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VMA 2,2 D : 18.02.91 Edition : 09.11.89 replaces : ISO-4113 Calibrating oil Injection pump : VE4/10F2100L168-1 : 0 460 404 042 Type number Customer Part-No. : Customer-specific information Customer : VM Engine : HR 492 HJ TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder assembly> : 1 688 901 000 Opening | bar: 147.00...150.00 Pressure> Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1000 Speed Charge press. hPa: 800 mm: 1.80...2.20 Setting value

1/min: 1000 Speed Charge press hPa: 800 Setting value bar: 3.10...3.70 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1500 Speed Charge press. hPa: 800 Del. quantity cm3/ 1000s.: 60.50...61.50 Shutoff electromagnet>Volt: 12 cm3/: 3.0Dispersion 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 600 Speed Del. quantity cm3/ 1000s.: 40.50...41.50 Shutoff electromagnet>Volt: 12 Low-idle speed regulation Speed 1/min: 400 Del. quantity cm3/ 1000s.: 13.00...17.00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.0 > 1000s.: (3.0) Full-load speed regulation Speed 1/min: 2300 Charge press hPa: 800 Del. quantity cm3/ 1000s.: 27.00...33.00 Start: Speed 1/min: 100 Del. quantity cm3/: 37.00...67.00 1000s.: 37.00 mind> Shutoff electromagnet>Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1500 Speed cm3/Inj.-qty. difference> 1000S.: 8.00...14.00 Shutoff electromagnet>Volt: 12 TD-travel dif.measurement

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

		4555			
1.Speed	1/min:	1500	†	1 1 /	/ D.Co
TD-travel		0.00 4.40	†	1st speed 1/min:	
difference>	mm:	0.907.78	+	Charge press. hPa:	୪୦୦
Shutoff		4.0	+	Shutoff	
electromagnet			+	electromagnet>Volt:	12
SP pressdif	.measu	ırement	+	Overflow :	41.7083.40
			+	quantity> cm3/10s:	(26.7098.40)
1.Speed	1/min:	1500	+	2nd speed 1/min:	
Supply pump			1	Charge press. hPa:	
pressure>			1	Shutoff	
difference>	har:	0.10.3	1	electromagnet>Volt:	12
Shutoff	Du.	0/11.10/0	1	Overflow :	55 40 170 00
electromagnet	Vol+•	12	$\perp$	quantity> cm3/10s:	
e tecti oliagnet	voct.	12	I	quarterey clist tos.	(40.001)4.00.
Inchection-nu	nn tec	t specifications	1	Delivery-quant. and	breakauay chan
		in parentheses	T	becivery quart. and	Dieakaway Chai.
rest specific	3 L 1 OF 15	in parentheses	T		
Timina dayira			†	And social Almini	700+
Timing-device	cnara	cteristic:	†	1nd speed 1/min:	
<b>-</b>		6400	t	Charge-air pressure	
2nd speed '			+	point> hPa:	
Charge press			+	LDA-stroke mm:	6,1
TD travel		7.608.40	+	Shutoff	
>	mm:	(7.308.70)	+	electromagnet>Volt:	12
Shutoff			+	Del. quantity cm3/:	52.0053.00
electromagnet>	·Volt:	12	+		(50.0055.00)
3rd speed 1			1	3rd speed 1/min:	
Charge press			1	Charge press. hPa:	
TD travel	mm:	1.802.20	1	Shutoff	
>		(1.302.70)	1	electromagnet>Volt:	12
Shutoff	******	(1.502.76)	1	Del. quantity cm3/:	
electromagnet>	Wal+•	12	$\mathbf{I}$		(0.509.50)
5th speed 1			T	5th speed 1/min:	
			Ť		
Charge press.	hPa:		<b>T</b>	Charge press. hPa:	מטט
TD travel	mm:	4.405.20	†	Shutoff	40
>	mm:	(4.105.50)	+	electromagnet>Volt:	12
Shutoff		4-	+	Del. quantity cm3/:	27.0033.00
electromagnet>	Volt:	12	+		(26.0034.00)
			+	9th speed 1/min:	
Supply-pump pr	essur	e characteristic:	+	Charge press. hPa:	800
			+	Shutoff	
1st speed 1	/min:	2100	+	electromagnet>Volt:	12
Charge press.			1	Del. quantity cm3/:	52.5055.50
Supply-pump			1	> 1000s.:	(51.0057.00)
pressure>	bar:	6.907.50	1	12th speed 1/min:	
Shutoff			1	Charge press. hPa:	
electromagnet>	Vol+•	12	1	Shutoff	000
	/min:		1	electromagnet>Volt:	12
Charge press.	hPa:		$\mathbf{I}$		
	nra.	800	Ţ	Del. quantity cm3/:	
Supply-pump	<b>L</b>	7 40 7 70	Ť		(59.0063.00)
pressure>	par:	3.103.70	Ť	18th speed 1/min:	OUU
Shutoff		40	†	Shutoff	40
electromagnet>			+	electromagnet>Volt:	
• •	/min:		+	Del. quantity cm3/:	
Charge press.	hPa:	800	+		(38.5043.50)
Supply-pump			+	20th speed 1/min:	
pressure>	bar:	1.802.40	+	Charge press. hPa:	800
Shutoff			+	Shutoff	
electromagnet>	Volt:	12	+	electromagnet>Volt:	12
			+	Del. quantity cm3/:	
Ovenley ayanti	+1/ 2+	overflow valve.	1		(61.50 67.50)

Electr. shutoff: 1/min: 400 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Idle delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 13.00...17.00 > 1000s.: (10.00...20.00) Dispersion cm3/: 3.0 1000s.: (3.0) 1/min: 450 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 2.50...8.50 1000s.: (0.50...10.50) 4th speed 1/min: 600 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...2.00 1000s.: (0.00...2.00) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1500 Inj.-qty. cm3/ : 3.00...5.00 difference> 1000s.: -Shutoff electromagnet>Volt: 12 2nd speed 1/min: 1500 3rd speed 1/min: 1500 cm3/: 8.00...14.00 Inj.-qty. difference> 1000s.: (8.00...14.00) Shutoff electromagnet>Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 : 0.90...1.10 TD-travel mm: (0.90...1.10) difference> Shutoff electromagnet>Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1/min: 1500 1st speed Supply pumppressure > : 0.10...0.30 bar: (0.20...0.20) difference>

Automatic starting fuel delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 45.00...65.00 1000s.: (45.00...65.00) 1/min: 550 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 35.00...55.00 1000s.: (35.00...55.00) 1/min: 100 4th speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 37.00...67.00 1000s.: (37.00...67.00) Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly almensions: Designation K mm: 3,2...3,4 KF mm: 5,6...6,0MS mm: 0,6...1,0 SVS max. mm: 3,5 LDA stroke mm: 6,1 mm: 17,0...19,0 XK XL mm: 8,6...12,0 Remarks: : .00(10.00...20.00)3.

Shutoff

electromagnet>Volt: 12

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VMA 2,2 H : 18.02.91 Edition : 20.07.88 replaces : ISO-4113 Calibrating oil Injection pump : VE4/10F2100L269 Type number : 0 460 404 050 Customer Part-No. : Customer-specific information Customer : HR 492 HJ Engine Power KW: 82 1/min: -Speed TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder assembly> : 1 688 901 000 Openina bar: 147.00...150.00 Pressure> Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -Indicator setting Piston stroke> mm: 1.0 Outlet> Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1000

Charge press. hPa: 1000 Setting value mm: 1.50...1.90 electromagnet>Volt: 12 Supply-pump pressure 1/min: 1000 Speed Charge press hPa: 1000 Setting value bar: 4.40...5.00 electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1500 Speed Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 66.00...67.00 > Shutoff electromagnet>Volt: 12 cm3/: 3.0Dispersion 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 700 Del. quantity cm3/ 1000s.: 53.00...54.00 Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 450 Speed Del. quantity cm3/ 1000s.: 13.00...17.00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0) Full-load speed regulation Speed 1/min: 2300 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 27.00...33.00 Start: 1/min: 100 Del. quantity cm3/: 47.00...67.00 1000s.: 47.00 mind> Shutoff electromagnet>Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement:

Speed

Speed 1/min: 1500 Charge press. hPa: 1000 Inj.-qty. cm3/amua-vlaau2 difference> 1000S.: 8.00...14.00 bar: 3.30...3.90 pressure> Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 TD-travel dif.measurement Overlow quantity at overflow valve: 1/min: 1500 1.Speed TD-travel 1/min: 700 1st speed difference> mm: 0.90...1.10 Charge press. hPa: 800 Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 SP press.-dif.measurement Overflow : 41.70...83.40 quantity> cm3/10s: (26.70...98.40) 2nd speed 1/min: 2100 1.Speed 1/min: 1500 Supply pump Charge press. hPa: 800 pressure> Shutoff difference> bar: 0.10...0.30 electromagnet>Volt: 12 : 55.60...139.00 Shutoff Overflow electromagnet Volt: 12 quantity> cm3/10s: (40.60...154.00) Inspection-pump test specifications Delivery-quant. and breakaway char.: Test specifications in parentheses Timing-device characteristic: 1nd speed 1/min: 700 Charge-air pressure-setting 2nd speed 1/min: 2100 point> hPa: 450 hPa: 1000 Charge press LDA-stroke mm: 6.1 mm: 7.10...7.90 TD travel Shutoff mm: (6.80...8.20) electromagnet>Volt: 12 Del. quantity cm3/: 62.00...63.00 > 1000s.: (60.00...65.00) Shutoff electromagnet>Volt: 12 3rd speed 1/min: 1000 3rd speed 1/min: 2450 Charge press hPa: 1000 Charge press. hPa: 1000 mm: 1.50...1.90 Shutoff TD travel mm: (1.00...2.40)electromagnet>Volt: 12 Del. quantity cm3/: 0.00...8.00 Shutoff electromagnet>Volt: 12 1000s.: (0.00...8.00) 5th speed 1/min: 1500 Charge press. hPa: 1000 1/min: 2300 5th speed Charge press. hPa: 1000 TD travel mm: 4.10...4.90 Shutoff mm: (3.80...5.20) electromagnet>Volt: 12 Del. quantity cm3/: 27.00...33.00 Shutoff 1000s.: (26.00...34.00) electromagnet>Volt: 12 1/min: 2100 9th speed Charge press. hPa: 1000 Supply-pump pressure characteristic: Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 57.70...60.70 1/min: 2100 1st speed Charge press. hPa: 1000 1000s.: (56.20...62.20) Supply-pump bar: 7.50...8.10 1/min: 1500 pressure> 12th speed Shutoff Charge press. hPa: 1000 Shutoff electromagnet>Volt: 12 1/min: 1000 electromagnet>Volt: 12 2nd speed Del. quantity cm3/: 66.00...67.00 Charge press. hPa: 1000 1000s.: (64.50...68.50) Supply-pump bar: 4.40...5.00 pressure> 16th speed 1/min: 600 Charge press. hPa: 1000 Shutoff electromagnet>Volt: 12 Shutoff 1/min: 700 3rd speed electromagnet>volt: 12

Del. quantity cm3/: 52.50...54.50 difference> mm: (0.90...1.10) 1000H.: (52.00...55.00) Shutoff 1/min: 700 18th speed electromagnet>Volt: 12 Shutoff electromagnet>Volt: 12 SP press.-dif.measurement: Del. quantity cm3/: 53.00...54.00 pompa di mandata (FP): 1000s.: (51.00...56.00) 1st speed 1/min: 1500 1/min: 700 20th speed Supply pump-Charge press. hPa: 1000 pressure > : 0.10...0.30 Shutoff difference> bar: electromagnet>Volt: 12 Shutoff Dela quantity cm3/: 67.50...70.50 > 1000s.: (66.00...72.00) electromagnet>Volt: 12 Automatic starting fuel delivery: 1/min: 400 1st speed Electr. shutoff: Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.00...75.00 > 1000s.: (55.00...75.00) 1st speed 1/min: 450 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1/min: 550 2nd speed Idle delivery: Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 37.00...57.00 1/min: 450 1st speed Shutoff 1000s.: (37.00...57.00) electromagnet>Volt: 12 Del. quantity cm3/: 13.00...17.00 4th speed 1/min: 100 1000s.: (10.00...20.00) cm3/: 3.0 Shutoff electromagrwet>Volt: 12 Dispersion 1000s.: (3.0) Del. quantity cm3/: 47.00...67.00 1/min: 475 1000s.: (47.00...67.00) 2nd speed Shutoff electromagnet>Volt: 12 Shutoff electromagnet: Del. quantity cm3/: 7.00...13.00 1000s.: (5.00...15.00) Cut-in 1/min: 550 >min voltage 4th speed : 10.0 Shutoff Rated voltage : 12.0 electromagnet Volt: 12 Del. quantity cm3/: 0.50...5.50 Mounting and assembly dimensions: 1000s.: (0.50...5.50) Designation Load-dependent start of delivery: K mm: 3,2...3,4 KF mm: 5,6...6.0 Inj.-qty.dif.measurement: mm: 0,6...1,0MS mm: 6,1 mm: 17.0...19.0 mm: 10.3...13.7 1/min: 1500 LDA stroke 1st speed Inj.-qty. cm3/ : 3.00...5.00 difference> 1000s.: -XK XL Shutoff electromagnet>Volt: 12 Remarks: 1/min: 1500 3rd speed : .00(10.00...20.00)3. cm3/: 8.00...14.00 Inj.-qty. difference> 1000s.: (8.00...14.00) Shutoff electromagnet>Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV):

TD-travel

1st speed 1/min: 1500

: 0.90...1.10

Note inst. in remarks column

Test scheet : VMA
Edition : 02.94
replaces : 13.07.88
Calibrating oil : ISO-4113

Injection pump : VE4/10F2100L168-2 Type number : 0 460 404 051

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : HR 492 HT

Power KW: 76 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500 Charge press. hPa: 800

Setting value mm: 4.60...5.00

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500 Charge press hPa: 800

Setting value bar: 4.80...5.40

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500 Charge press. hPa: 800 Del. quantity cm3/

> 1000s.: 56.50...57.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600 Del. quantity cm3/

> 1000s.: 45.50...46.50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

> 1000s.: 13.00...17.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 > 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2300 Charge press hPa: 800

Del. quantity cm3/

> 1000s.: 27.00...33.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 37.00...67.00

mind> 1000s.: 37.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500

Charge press hPa: -	+		
Inj.—qty. cm3/	1	1st speed 1/min:	600
difference> 1000s.: - 8.014.0 "	1	Charge press. hPa:	
Shutoff	1	Shutoff	000
electromagnet>Volt: 12	1	electromagnet>Volt:	12
TD-travel dif.measurement	T	Overflow :	
TO CHAVEE Off incasurement	T		
1 Canad 4 (min. 1500)	<b>T</b>	quantity> cm3/10s:	
1. Speed 1/min: 1500	†	2nd speed 1/min:	
Charge press hPa: -	+	Charge press. hPa:	800
TD-travel	+	Shutoff	
difference> mm: - 0.91.1 "	+	electromagnet>Volt:	12
Shutoff	+	Overflow:	55.60139.00
electromagnet>Volt: 12	+	quantity> cm3/10s:	(40.60154.00)
Inspection-pump test specifications	1	Delivery-quant. and	hreakauay chan
Test specifications in parentheses	1	becively qualit. and	bi canaway cilai
rest specifications in parentheses	T		
Timing-device characteristic:	T	1nd speed 1/min:	700
riming-device characteristic.	T		
2nd annual 1/min. 2400	Ť	Charge-air pressure	
2nd speed 1/min: 2100	†	point> hPa:	
Charge press hPa: 800	+	LDA-stroke mm:	6.7
TD travel mm: 7.608.40	+	Shutoff	
> mm: (7.308.70)	+	electromagnet>Volt:	
Shutoff	+	Del. quantity cm3/:	52.0053.00
electromagnet>Volt: 12	+	> 1000s.:	(50.0055.00)
3rd speed 1/min: 1500	į.	3rd speed 1/min:	2450
Charge press hPa: 800	1	Charge press. hPa:	
TD travel mm: 4.605.00	1	Shutoff	355
> mm: (4.105.50)	T	electromagnet>Volt:	12
Shutoff	T		
	<b>T</b>	Del. quantity cm3/:	(0.50 0.50)
electromagnet>Volt: 12	†		(0.509.50)
4th speed 1/min: 1000	†	5th speed 1/min:	
Charge press hPa: 800	+	Charge press. hPa:	800
TD travel mm: 1.602.40	+	Shutoff	
> mm: (1.302.70)	+	electromagnet>Volt:	
Shutoff	+	Del. quantity cm3/:	27.0033.00
electromagnet>Volt: 12	+	> 1000s.:	(26.0034.00)
•	1	9th speed 1/min:	
Supply-pump pressure characteristic:	1	Charge press. hPa:	
	1	Shutoff	
1st speed 1/min: 2100	1	electromagnet>Volt:	12
Charge press. hPa: 800	I	Del. quantity cm3/:	
	T		(47.4053.40)
Supply-pump pressure> bar: 6.907.50	T		
	<b>†</b>	12th speed 1/min:	
Shutoff	†	Charge press. hPa:	800
electromagnet>Volt: 12	†	Shutoff	
2nd speed 1/min: 1500	+	electromagnet>Volt:	12
Charge press. hPa: 800	+	Del. quantity cm3/:	
Supply-pump	+	> 1000s.:	(55.0059.00)
pressure> bar: 4.805.40	+	18th speed 1/min:	600
Shutoff	+	Charge press. hPa:	_
electromagnet>Volt: 12	1	Shutoff	
3rd speed 1/min: 600	1	electromagnet>Volt:	12
Charge press. hPa: 800	1	Del. quantity cm3/:	
	1		(43.5048.50)
Supply—pump oressure> bar: 1.802.40	I		
	T	20th speed 1/min:	
Shutoff	†	Charge press. hPa:	OUU
electromagnet>Volt: 12	†	Shutoff	40
	†	electromagnet>Volt:	
Overlow quantity at overflow valve:	+	Del. quantity cm3/:	58.5061.50

1000s.: -2nd speed 1/min: 550 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 37.00...57.00 Electr. shutoff: 1000s.: (37.00...57.00) 1st speed 1/min: 400 1/min: 100 4th speed Del. quantity cm3/: 0.00...3.00 Shutoff 1000s.: (0.60...3.00) electromagnet>Volt: 12 Del. quantity cm3/: 37.00...67.00 Shutoff 1000s.: (37.00...67.00) electromagnet>volt: -Idle delivery: Shutoff electromagnet: 1st speed 1/min: 400 Cut-in Shutoff >min voltage : 10.0 : 12.0 electromagnet>Volt: 12 Rated voltage Del. quantity cm3/: 13.00...17.00 1000s.: (10.00...20.00) Mounting and assembly dimensions: Dispersion cm3/: 3.01000s.: (3.0) Designation 2nd speed 1/min: 600 mm: 3.2...3.4 KF Shutoff mm: 5.6...6.0 electromagnet>Volt: 12 Del. quantity cm3/: 0.00...2.00 MS mm: 0.6...1.0 SVS max. mm: 2.3 1000s.: (0.00...2.00) LDA stroke mm: 6.1 mm: 17.0 ..19.0 3rd speed 1/min: 450 XK Shutoff XL mm: 9.4...12.8 electromagnet>Volt: 12 Del. quantity cm3/: 2.50...8.50 Remarks: 1000s.: (0.50...10.50) : .00(10.00...20.00)3. Load-dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1500 Charge press. hPa: -Inj.-qty. cm3/ : -3.0...-5.0 # difference> 1000s.: -Shutoff electromagnet>Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1/min: 1500 1st speed Charge press. hPa: -Supply pump-: -0.1...0.3 # pressure > difference> bar: -Shutoff electromagnet>Volt: 12 Automatic starting fuel delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 45.00...65.00

1000s.: (45.00...65.00)

Shutoff BOSCH-INJ.-PUMP TEST SPECIFICATIONS electromagnet>Volt: 12 Note inst. in remarks column Supply-pump pressure Test scheet : SOF 1/min: 600 Speed Edition : 01.07.92 Charge press hPa: 800 replaces : 18.07.89 Setting value bar: 3.40...4.00 Calibrating oil : ISO-4113 Shutoff electromagnet>Volt: 12 Injection pump : VE4/10F2050R318 Type number : 0 460 404 059 Full-load del. with charge press.: Customer-specific information Speed 1/min: 1950 Customer : IVECO-SOFIM Charge press. hPa: 800 Del. quantity cm3/ Engine : 8144.97.2200 1000s.: 56.00...57.00 Shutoff KW: 83 Power electromagnet>Volt: 12 cm3/: 3.0Dispersion 1000s.: (3.0) TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Full-load del. w/out charge press.: Calibrating-oil Speed 1/min: 500 return>temp. > °C Del. quantity cm3/ 1000s.: 42.59...43.50 with>thermometer>: 40...48 Electronically> : 42...50 Shutoff electromagnet>Volt: 12 Inlet press., bar: 0.35 Low-idle speed regulation Calibrating nozzle-holder : 1 688 901 000 assembly> 1/min: 425 Speed Del. quantity cm3/ 1000s.: 12.50...16.50 Opening Pressure> bar: 147.00...150.00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.0 Test inj. tubing : 1 680 750 017 1000s.: (3.0) Outside diameter : 6.00 Full-load speed regulation x Wall>thickness : 2.00 x Length> mm: 840 1/min: 2475 Speed Charge press hPa: 800 Start of delivery Del. quantity cm3/ mm: 0.3 1000s.: 14.00...20.00 Prestroke (from BDC): +-0.02(0.04)Shutoff electromagnet>Volt: 12 Indicator setting Piston stroke> mm: 1.0 Start: Outlet> : A 1/min: 100 Del. quantity cm3/: 55.00...85.00 Injection-pump setting values Test specifications in parentheses 1000s.: 55.00 mind> Shutoff Timing-device travel electromagnet>Volt: 12 Speed 1/min: 600 Load-dependent start of delivery: Charge press. hPa: 800 Inj.-qty.dif.measurement: Setting value mm: 1.10...1.50

	400			
Speed 1/min	: 600	+	Supply-pump	
Injqty. cm3/		+	pressure> bar:	5.205.80
difference> 1000S.	: 13.0019.00#	+	Shutoff	
Shutoff		1	electromagnet>Volts	. 10
	. 40	T		
electromagnet>Volt		+	3rd speed 1/min:	
TD-travel dif.meas	urement	+	Charge press. hPa:	800
		1	Supply-pump	
1.Speed 1/min	• 400	1		7.207.80
	. 000	T		7.207.00
TD-travel		+	Shutoff	
difference> mm	: 0.600.80#	+	electromagnet>Volt:	12
Shutoff		+	•	
electromagnet>Volt	• 12	1	Overlow quantity at	by antique value.
		T	over tow qualitity at	white warve:
SP press.—dif.meas	urement	t		
		+	1st speed 1/min:	500
1.Speed 1/min	: 600	+	Shutoff	
Supply pump		1	electromagnet>Volt:	10
		T		
pressure>		+	Overflow :	
difference> bar	: 0.100.30'	+	quantity> cm3/10s:	(41.7083.30)
Shutoff		1	2nd speed 1/min:	
	. 12	- 1		
electromagnet Volt	12	<b>T</b>	Charge press. hPa:	800
		+	Shutoff	
Inspection pump te	st specifications	1	electromagnet>Volt:	12
Test specification		1	Overflow :	55 60 130 00
rest specification	s iii pai ei tileses	T		
		+	quantity> cm3/10s:	(55.60139.00.
Timing-device char	acteristic:	+		
-		1	Delivery-quant. and	hreakaway char
1st speed 1/min	• 600	1	quarior aria	D. Carranay Origin.
		T		
Charge press hPa	: 800	t		
TD travel mm	: 1.101.50	+	1nd speed 1/min:	600∗
> mm	: (0.801.80)	1	Charge-air pressure	-settina
electromagnet>Volt		1	point> hPa:	
etectrollagilet/vott	4000	T		
2nd speed 1/min		t	_	5.3
	: 800	+	Shutoff	
TD travel mm	4.205.00	1	electromagnet>Volt:	12
> mm	(3.905.30)	- 1		
	(3.903.30)	T	Del. quantity cm3/:	33.0034.00
Shutoff		+		(51.0056.00)
electromagnet>Volt:	: 12	+	2nd speed 1/min:	2550
3rd speed 1/min:	2000	1	Charge press. hPa:	
	: 800	- 1	Shutoff	000
		T		• •
TD travel mm:		+	electromagnet Volt:	
> mm:	(8.409.80)	+	Del. quantity cm3/:	0.006.00
Shutoff		1	> 1000s.:	
	. 15	1		
electromagnet>Volt		T	3rd speed 1/min:	
4th speed 1/min:		+	Charge press. hPa:	800
Charge press hPa:	800	+	Shutoff	
	10.0010.80	1	electromagnet>Volt:	12
		- {		
> mm:	(10.0010.00)	T	Del. quantity cm3/:	
Shutoff		+		(11.0023.00)
electromagnet>Volt:	12	+	4th speed 1/min:	2350
<b>5 (0)</b>		1	Charge press. hPa:	
Complete name and annual		1		000
Supply-pump pressur	e characteristic:	T	Shutoff	4.4
		+	electromagnet>Volt:	
1st speed 1/min:	600	+	Del. quantity cm3/:	
Charge press. hPa:		1	> 1000s.:	
	000			
Supply-pump		T	5th speed 1/min:	
pressure> bar:	3.404.00	+	Charge press. hPa:	800
Shutoff		+	Shutoff	
electromagnet>Volt:	12	1	electromagnet>Volt:	12
		7	not missible 7'	E/ 00 E7 00
2nd speed 1/min:		Ť	Del. quantity cm3/:	24.0027.00
Charge press. hPa:	800	+	> 1000s.:	(53.3057.70)

Oth speed 1/min: 1950 Charge press. hPa: 800 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 56.0057.00 > 1000s.: (54.5058.50) 7th speed 1/min: 1200 Charge press. hPa: 800 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 62.5065.50 > 1000s.: - 8th speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 42.5043.50 > 1000s.: (40.5045.50)	TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 600 TD-travel : 0.600.80# difference> mm: (0.600.80) Shutoff electromagnet>Volt: 12  SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 600 Supply pump- pressure > : 0.100.30' difference> bar: (0.100.30) Shutoff electromagnet>Volt: 12  Automatic starting fuel delivery:
<del>-</del>	
Electr. shutoff:	- 1st speed 1/min: 350 - Shutoff
4	electromagnet>Volt: 12
1st speed	Del. quantity cm3/: 50.0070.00
Del. quantity cm3/: 0.003.00 - 1000s.: (0.003.00)	> 1000s.: (50.0070.00)
/ 10008.: (0.005.00)	- 4th speed 1/min: 100
Idle delivery:	- Shutoff
	electromagnet>Volt: 12
1st speed 1/min: 425	Del. quantity cm3/: 55.0085.00
Shutoff	- > 1000s.: (55.0085.00)
electromagnet>Volt: 12	
Del. quantity cm3/: 12.5016.50	- Shutoff electromagnet:
> 1000s.: (10.5018.50)	- Contract
Dispersion cm3/: 3.0 + 1000s.: (3.0)	- Cut-in - >min voltage : 10.0
2nd speed 1/min: 500	Rated voltage : 12.0
Shutoff	L Nated vottage . 12.5
electromagnet>Volt: 12	- Mounting and assembly dimensions:
Del. quantity cm3/: 5.5010.50	•
> 1000s.: (5.5010.50)	- KF mm: 5.66.0
3rd speed 1/min: 700 +	- MS mm: 1.62.0
Shutoff	- XK mm: 20.022.0
electromagnet>Volt: 12	- XL mm: 11.815.2
Del. quantity cm3/: 2.005.00	- Ya mm: 37.939.9 - Yb mm: 41.647.2
> 1000s.: (2.005.00)	- Yb mm: 41.647.2
Load-dependent start of delivery:	- - Remarks:
Inj.—qty.dif.measurement:	: .50(10.5018.50)3
ing. quy. at thineasurement.	-
1st speed	•
Injqty. cm3/ : 13.0019.00#	
difference> 1000S.: (13.0019.00)	•
Shutoff	•
electromagnet>Volt: 12	
2nd speed 1/min: 600 +	•
Injqty. cm3/: 11.0013.00' + difference> 1000S.: (11.0013.00) +	•
Shutoff +	
electromagnet Volt: 12	
•	

Note inst. in remarks column

Test scheet : VMA
Edition : 02.94
replaces : 14.02.92
Calibrating oil : ISO-4113

Injection pump : VE4/10F1600L352 Type number : 0 460 404 061

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : HR 494 HP

Power KW: 53 Speed 1/min: 1600

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening |

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

Setting value mm: 1.90...2.30

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200

Setting value bar: 4.80...5.40

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200

Del. quantity cm3/

> 1000s.: 43.50...44.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.5 > 1000s.: (3.5)

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

> 1000s.: 11.50...15.50

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 > 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1650

Del. quantity cm3/

> 1000s.: 27.00...33.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 45.00...85.00

mind> 1000s.: 45.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1200

Inj.-qty. cm3/

difference> 1000S.: - 10.0..-18.0 #

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1.Speed 1/min: 1200

TD-travel

difference> mm: -0.9...-1.1 #

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses	+ 5th speed 1/min: 1650 + Shutoff
reat apears reations in pareneteses	+ electromagnet>Volt: 12
Timing-device characteristic:	Del. quantity cm3/: 27.0033.00
Timing device ondideter isere.	+ > 1000s.: (24.0036.00)
2nd speed 1/min: 1600	+ 8th speed 1/min: 1625
TD travel mm: 3.604.40	+ Shutoff
> mm: (3.304.70)	+ electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 33.5041.50
electromagnet>Volt: 12	9th speed 1/min: 1600
3rd speed 1/min: 1200	Shutoff
TD travel mm: 1.902.30	electromagnet>Volt: 12
> mm: (1.402.80)	Del. quantity cm3/: 37.0040.00
Shutoff	> 1000s.: (35.5041.50)
electromagnet>Volt: 12	12th speed 1/min: 1200
4th speed 1/min: 1000	Shutoff
TD travel mm: 0.701.50	electromagnet>Volt: 12
> mm: (0.401.80)	Del. quantity cm3/: 43.5044.50
Shutoff	> 1000s.: (41.0047.00)
electromagnet>Volt: 12	20th speed 1/min: 600
	Shutoff
Supply-pump pressure characteristic:	electromagnet>Volt: 12
catelogy frame for occasion and account account.	Del. quantity cm3/: 42.5045.50
2nd speed 1/min: 600	+ > 1000s.: (41.0047.00)
Supply-pump -	1000011 (1110011111100)
pressure> bar: 2.403.00 -	
Shutoff -	Mech. shutoff:
electromagnet>Volt: 12	1
3rd speed 1/min: 1200 -	1st speed
Supply-pump -	Del. quantity cm3/: 0.003.00
pressure> bar: 4.805.40 -	> 1000s.: (0.003.00)
Shutoff -	Shutoff
electromagnet>Volt: 12	electromagnet>volt: 12
4th speed 1/min: 1600	- Cood and and a voter ve
Supply-pump	Electr. shutoff:
pressure> bar: 6.407.00 -	
Shutoff -	1st speed 1/min: 400
electromagnet>Volt: 12	Del. quantity cm3/: 0.003.00
-	> 1000s.: (0.003.00)
Overlow quantity at overflow valve:	Shutoff
ordinary and ordinary ration	electromagnet>volt: -
1st speed 1/min: 600	
Shutoff	Idle delivery:
electromagnet>Volt: 12	
Overflow : 41.7086.20	1st speed
quantity> cm3/10s: (26.70101.20)	Shutoff
2nd speed	electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 11.5015.50
electromagnet>Volt: 12	> 1000s.: (9.5017.50)
Overflow : 55.60139.00	Dispersion cm3/: 3.5
quantity> cm3/10s: (40.60154.00)	> 1000s.: (3.5)
	- 2nd speed 1/min: 550
Delivery-quant. and breakaway char.:	- Shutoff
	electromagnet>Volt: 12
4	Del. quantity cm3/: 0.003.00
2nd speed	> 1000s.: (0.003.00)
Shutoff	- 3rd speed 1/min: 480
electromagnet Volt: 12	- Shutoff
Del. quantity cm3/: 0.003.00	- electromagnet>Volt: 12
> 1000s.: (0.003.00)	- Del. quantity cm3/: 2.008.00
·	•

```
1000s.: (1.00...9.00)
>
Load-dependent start of delivery:
 Inj.-qty.dif.measurement:
 1st speed 1/min: 1200
Inj.-qty. cm3/
                 : -5.0...-7.0 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement:
pompa di mandata (FP):
1st speed
             1/min: 1200
Supply pump-
                   : -0.1...-0.3 "
pressure >
difference>
                bar: -
Shutoff
electromagnet>Volt: 12
Automatic starting fuel delivery:
              1/min: 250
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 50.00...80.00
             1000s.: (50.00...80.00)
2nd speed
              1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.00...60.00
> 1000s.: (40.00...60.00)
4th speed
              1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.00...85.00
             1000s.: (45.00...85.00)
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10.0
Rated voltage
                   : 12.0
Mounting and assembly dimensions:
Designation
                 mm: 3.2...3.4
K
KF
                mm: 5.7...5.9
MS
                mm: 0.6...1.0
                mm: 1.3
SVS max.
XK
                mm: 17.0...19.0
                mm: 14.2...17.6
XL
Remarks:
                                    ...15
                  : .50(9.50...17.50) 3.
```

Note inst. in remarks column

Test scheet : SOF

Edition : 03.07.92 replaces : 17.07.89 Calibrating oil : ISO-4113

Injection pump : VE4/10F2050R361 Type number : 0 460 404 064

Customer Part-No. :

Customer—specific information Customer : IVECO—SOFIM

Engine : 8144.97.2280

TEST BENCH REQUIREMENTS

Calibrating-oil return>temp. > °C

with>thermometer> : 40...48 Electronically> : 42...50

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

**Opening** 

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 0.2

> (from BDC):  $\leftarrow 0.02(0.04)$ 

Injection pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000

Setting value mm: 2.80...3.20

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000 Charge press hPa: 1000

Setting value bar: 5.10...5.70

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200 Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 62.50...63.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 35.50...36.50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 9.00...13.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.7 > 1000S.: (2.7)

Residual-Delivery Setting

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 3.00...7.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2500 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 21.00...27.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.00...90.00

mind> 1000s.: 60.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery: Charge press. hPa: 1000 Inj.-qty.dif.measurement: Supply-pump pressure> bar: 4.10...4.70 1/min: 1000 Speed Shutoff Charge press hPa: 1000 electromagnet>Volt: 12 1/min: 1000 cm3/Inj.-qty. 2nd speed difference> 1000s.: 14.50...20.50# Charge press. hPa: 1000 Shutoff Supply-pump electromagnet>Volt: 12 bar: 5.10...5.70 pressure> TD-travel dif.measurement Shutoff electromagnet>Volt: 12 1/min: 1000 1.Speed 1/min: 2000 3rd speed hPa: 1000 Charge press. hPa: 1000 Charge press TD-travel Supply-pump difference> mm: 0.60...0.80# bar: 7.30...7.90 pressure> Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 SP press.-dif.measurement Overlow quantity at overflow valve: 1/min: 1000 1.Speed hPa: 1000 Charge press 1st speed 1/min: 500 Supply pump Shutoff pressure> electromagnet>Volt: 12 bar: 0.10...0.30\* difference> Overflow : 41.70...83.40 quantity> cm3/10s: (41.70...83.40) Shutoff 1/min: 2300 electromagnet Volt: 12 2nd speed Charge press. hPa: 1000 Inspection-pump test specifications Shutoff Test specifications in parentheses electromagnet>Volt: 12 : 55.60...139.00 Overflow Timing-device characteristic: quantity> cm3/10s: (55.60...139.00) 1/min: 2200 2nd speed Delivery-quant. and breakaway char.: hPa: 1000 Charge press mm: 8.00...8.80 TD travel mm: (7.70...9.10) 1nd speed 1/min: 800 Shutoff Charge-air pressure-setting electromagnet>Volt: 12 point> hPa: 400 1/min: 1000 3rd speed LDA-stroke mm: 4.8 Charge press hPa: 1000 Shutoff mm: 2.80...3.20 TD travel electromagnet>Volt: 12 mm: (2.30...3.70) Del. quantity cm3/: 52.50...53.50 1000s.: (50.50...55.50) Shutoff > electromagnet>Volt: 12 3rd speed 1/min: 2600 1/min: 600 Charge press. hPa: 1000 4th speed hPa: 1000 Shutoff Charge press mm: 0.60...1.40 electromagnet>Volt: 12 TD travel Del. quantity cm3/: 0.00...7.00 mm: (0.30...1.70) 1000s.: -Shutoff 1/min: 2500 electromagnet>Volt: 12 5th speed 1/min: 2000 Charge press. hPa: 1000 6th speed Charge press. hPa: 1000 Shutoff mm: 7.40...8.20 TD travel electromagnet>Volt: 12 mm: (7.10...8.50) Del. quantity cm3/: 21.00...27.00 1000s.: (20.00...28.00) Shutoff electromagnet>Volt: 12 9th speed 1/min: 2300 Charge press. hPa: 1000 Supply-pump pressure characteristic: Shutoff electromagnet>Volt: 12 1st speed 1/min: 600 Del. quantity cm3/: 53.50...56.50

> 1000s.: (52.8057.20)	+ Del. quantity_cm3/: 1.004.00
10th speed 1/min: 1950 Charge press. hPa: 1000	† > 1000s.: -
Shutoff	Load-dependent start of delivery:
electromagnet>Volt: 12 Del. quantity cm3/: 56.501.50	inj.—qty.dif.measurement:
> 1000s.: -	2nd speed 1/min: 1000
11th speed  1/min: 800 Charge press. hPa: 7000	+ Charge press. hPa: 1000
Shutoff	+ Injqty. cm3/: 12.0014.00* + difference> 1000S.: (12.0014.00)
electromagnet>Volt: 12	+ Shutoff
Del. quantity cm3/: 58.0061.00 > 1000s.: -	+ electromagnet Volt: 12 + 4th speed  1/min: 1000
12th speed	+ Charge press. hPa: 1000
Charge press. hPa: 1000 Shutoff	+ Injqty. cm3/: 14.5020.50# + difference> 1000S.: (13.5021.50)
electromagnet>Volt: 12	+ Shutoff
Del. quantity cm3/: 62.5063.50 > 1000s.: (61.0065.00)	electromagnet>Volt: 12
18th speed 1/min: 500	+ 2nd speed 1/min: 1000 + Charge press. hPa: 1000
Shutoff	+ TD-travel : 0.600.80#
electromagnet>Volt: 12 Del. quantity cm3/: 35.5036.50	<pre>+ difference&gt; mm: (0.600.80) + Shutoff</pre>
> 10008:: (33.5038.50)	+ electromagnet>Volt: 12
	+ 2nd speed 1/min: 1000 + Charge press. hPa: 1000
	+ Supply pump-
Electr. shutoff:	+ pressure > : 0.1c0.30* + difference> bar: (0.100.30)
1st speed 1/min: 425	+ Shutoff
Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)	+ electromagnet>Volt: 12
/ 10003 (0.003.00)	Part-load del.at 3rd injqty.
Damper set qty.:	terza fermo della portata
LFG-setting:	<pre>+ stop (EGR set) + scarico) (ARF)</pre>
	gaz d'échappement-ARF)
Idle delivery:	+ Spacing mm: 12.0
1st speed 1/min: 425	1st speed 1/min: 1000
Shutoff electromagnet Volt: 12	+ Charge press. hPa: 1000 + Shutoff
Del. quantity cm3/: 9.0013.00	electromagnet>Volt: 12
> 1000s.: (8.0014.00) 2nd speed	+ Del. quantity cm3/: 42.0044.00 + > 1000s.: (40.5045.50)
Shutoff	
electromagnet>Volt: 12 Del. quantity cm3/: 3.009.00	+ Automatic starting fuel delivery:
> 1000s.: -	1st speed 1/min: 200
Rest delivery:	+ Shutoff + electromagnet>Volt: 12
	+ Del. quantity cm3/: 65.0095.00
1st speed	+ > 1000s.: (65.00,95.00)
electromagnet>Volt: 12	2nd speed 1/min: 350
Del. quantity cm3/: 3.007.00 > 1000s.: (2.008.00)	+ Shutoff + electromagnet>Volt: 12
2nd speed 1/min: 650	+ Del. quantity cm3/: 30.0040.00
Shutoff	+ > 1000s.: (30.0040.00)
electromagnet Volt: 12	1333311 (33.33)

1/min: 100 4th speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 60.00...90.00 1000s.: (60.00...90.00) Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: KF mm: 5.6...6.0 MS mm: 1.6...2.0 mm: 33.0...35.0 Ya mm: 49.7...55.3 Yb Ajustement Potentiometer: Angle for ": ->12<-ARF pot. Supply voltage pot. > volt: 5.00 Output volt volt: 2.41 pot. > Remarks: ..0.0 : 0 (0.00...0.00)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column

: VMA 2,2 F1 Test scheet Edition : 14.04.92 : 18.02.91 replaces Calibrating oil : ISO-4113

Injection pump : VE4/10F2100L269-1 Type number : 0 460 404 065

Customer Part-No. :

Customer-specific information

Customer

Engine : HR 492.4 HJ

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly>

Openina

bar: 147.00...150.00 Pressure>

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery mm: -Prestroke (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1000 Charge press. hPa: 1000 Setting value mm: 1.50...1.90

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000 Charge press hPa: 1000

Setting value bar: 4.40...5.00

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 1500 Speed Charge press. hPa: 1000 Del. quantity cm3/

1000s.: 66.00...67.00

Shutoff

electromagnet>Volt: 12 cm3/: 3.0Dispersion 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 700

Del. quantity cm3/

1000s.: 45.00...46.00

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 450 Speed

Del. quantity cm3/ >

1000s.: 13.00...17.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2300 Charge press hPa: 1000 Del. quantity cm3/

1000s.: 27.00...33.00

Start:

Speed 1/min: 100

Del. quantity cm3/: 47.00...67.00

1000s.: 47.00 mind>

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1500 Speed

cm3/ Inj.-qty.

difference> 1000S.: 8.00...14.00

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

		1	2nd speed 1/min:	2100
1.Speed 1/min	: 1500	1	Charge press. hPa:	
TD-traveL		1	Shutoff	1000
	: 0.901.10	1	electromagnet>Volt:	12
Shutoff		1	Overflow :	55.60139.00
electromagnet>Volt	: 12	1	quantity> cm3/10s:	
•		1	,	
Inspection pump te	st specifications	+	Delivery-quant. and	breakaway char.
Test specification	s in parentheses	+		-
		+		
Timing-device chara	acteristic:	+	1nd speed 1/min:	
	2420	+	Charge-air pressure	
2nd speed 1/min		t	point> hPa:	450
Charge press hPa	: 7000	+	Shutoff	••
TD travel mm	: 7.107.90	†	electromagnet>Volt:	12
******	: (6.808.20)	+	Del. quantity cm3/:	58.5059.50
Shutoff		+		(56.5061.50)
electromagnet>Volt		+	3rd speed 1/min:	
3rd speed 1/min		+	Charge press. hPa:	1000
Charge press hPa	: 1000	+	Shutoff	
TD travel mm:	: 1.501.90	+	electromagnet>Volt:	12
>	(1.002.40)	+	Del. quantity cm3/:	0.008.00
Shutoff		+		(0.008.00)
electromagnet>Volt:		+	5th speed 1/min:	2300
5th speed 1/min:		+	Charge press. hPa:	1000
Charge press. hPa:	: 1000	+	Shutoff	
TD travel mm:	4.104.90	+	electromagnet>Volt:	12
> mm:	(3.805.20)	+	Del. quantity cm3/:	
Shutoff		+	> 1000s.:	(26.0034.00)
electromagnet>Volt:	: 12	+	9th speed 1/min:	
_		+	Charge press. hPa:	1000
Supply-pump pressur	re characteristic:	1	Shutoff	
		+	electromagnet>Volt:	12
1st speed 1/min:	2100	1	Del. quantity cm3/:	56.5059.50
Charge press. hPa:		1	> 1000s.:	(55.0061.00)
Supply-pump		1	12th speed 1/min:	
pressure> bar:	7.508.10	1	Charge press. hPa:	
Shutoff		1	Shutoff	
electromagnet>Volt:	12	1	electromagnet>Volt:	12
2nd speed 1/min:		1	Del. quantity cm3/:	
Charge press. hPa:		1	> 1000s.:	(64.5068.50)
Supply-pump		1	18th speed 1/min:	
pressure> bar:	4.405.00	1	Shutoff	, 55
Shutoff		1	electromagnet>Volt:	12
electromagnet>Volt:	12	1	Del. quantity cm3/:	
3rd speed 1/min:		1		(43.0048.00)
	1000	1	20th speed 1/min:	
Supply-pump	1000	1	Charge press. hPa:	
	3.604.20	1	Shutoff	1000
Shutoff	3.30	1	electromagnet>Volt:	12
electromagnet>Volt:	12	1	Del. quantity cm3/:	
eceet onaghet vote.	12	1		(66.2072.20)
Overlow quantity at	overflow valve.	1	- 10005	
oral con qualitatoy at	ordination ractor	1		
1st speed 1/min:	700	1		
Charge press. hPa:		1	Electr. shutoff:	
Shutoff		1		
electromagnet>Volt:	12	1	1st speed 1/min:	45N
	41.7083.40	1	Del. quantity cm3/:	
quantity> cm3/10s:		1		(0.003.00)
-1		7		

Idle delivery: Shutoff electromagnet>Volt: 12 1/min: 450 1st speed Del. quantity cm3/: 40.00...60.00 Shutoff 1000s.: (40.00...60.00) electromagnet>Volt: 12 Del. quantity cm3/: 13.00...17.00 4th speed 1/min: 100 1000s.: (10.00...20.00) Shutoff cm3/: 3.0Dispersion electromagnet>Volt: 12 1000s.: (3.0) Del. quantity cm3/: 47.00...67.00 1/min: 475 1000s.: (47.00...67.00) 2nd speed Shutoff electromagnet>Volt: 12 Shutoff electromagnet: Del. quantity cm3/: 7.00...13.00 1000s.: (5.00...15.00) > Cut-in 1/min: 550 4th speed >min voltage : 10,0 Shutoff Rated voltage : 12,0 electromagnet Volt: 12 Del. quantity cm3/: 0.50...5.50 > 1000s.: (0.50...5.50) Mounting and assembly dimensions: Designation Load-dependent start of delivery: mm: 3,2...3,4 K KF mm: 5,6...6,0 Inj.-qty.dif.measurement: MS mm: 0,6...1,0 1/min: 1500 1st speed XK mm: 20,0...22,0 Inj.-qty. cm3/ : 3.00...5.00 XL mm: 10,0...13,4 difference> 1000s.: -Shutoff Remarks: electromagnet>Volt: 12 1/min: 1500 : .00(10.00...20.00)3. 3rd speed cm3/: 8.00...14.00 Inj.-qty. difference> 1000s.: -Shutoff electromagnet>Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1/min: 1500 1st speed : 0.90...1.10 TD-travel difference> mm: -Shutoff electromagnet>Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1500 Supply pumppressure > : 0.10...0.30 difference> bar: -Shutoff electromagnet>Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 52.00...72.00

2nd speed

1/min: 550

...17

1000s.: (52.00...72.00)

Note inst. in remarks column

Test scheet : SOF

Edition : 02.08.93 replaces : 07.12.92 Calibrating oil : ISO-4113

Injection pump : VE4/10F2050R364 Type number : 0 460 404 066

Customer Part-No. :

Customer—specific information Customer : SOFIM

Engine : 8140.67.2580

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening |

Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery

Prestroke mm: 0.2

> (from BDC): +-0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000

Setting value mm: 3.10...3.50

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000

Setting value bar: 4.50...5.10

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 2000

Del. quantity cm3/

> 1000s.: 41.00...42.00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 15.00...19.00

Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 220

Del. quantity cm3/

> 1000s.: 14.00...20.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 70.00...100.00

mind> 1000s.: 70.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1000

Inj.—qty. cm3/

difference> 1000s.: 18.50...19.50 #

Shutoff

electromagnet>Volt: 12 SP press.-dif.measurement

1.Speed 1/min: 1000

Supply pump pressure>

pressure/

difference> bar: 0.10....0.30#

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

	+ electromagnet volt: 12
Timing-device characteristic:	<pre>Del. quantity cm3/: 0.003.00</pre>
•	+ > 1000s.: (0.003.00)
2nd speed 1/min: 1800	+ 5th speed 1/min: 2200
TD travel mm: 7.308.10	+ Shutoff
	+ electromagnet>Volt: 12
Shutoff	+ Del. quantity cm3/: 14.0020.00
electromagnet>Volt: 12	+ > 1000s.: (13.0021.00)
3rd speed 1/min: 1000	+ 12th speed 1/min: 2000
TD travel mm: 3.103.50	+ Shutoff
> mm: (2.604.00)	<pre>+ electromagnet&gt;Volt: 12</pre>
Shutoff	+ Del. quantity cm3/: 41.0042.00
electromagnet>Volt: 12	+ > 1000s.: (39.5043.5)
4th speed 1/min: 600	+ 15th speed 1/min: 1000
TD travel mm: 0.801.60	+ Shutoff
> mm: (0.501.90)	1
Shutoff	+ electromagnet>Volt: 12
	pel. quantity cm3/: 36.5039.50
electromagnet>Volt: 12	+ > 1000s.: (35.5040.50)
5th speed 1/min: 2000	† 17th speed 1/min: 600
TD travel mm: 8.209.00	+ Shutoff
> mm: (7.909.30)	+ electromagnet>volt: 12
Shutoff	+ Del. quantity cm3/: 33.5036.50
electromagnet>Volt: 12	+ > 1000H.: (32.5037.50)
	+ 20th speed 1/min: 500
Supply-pump pressure characteristic:	Shutoff
cable to be and a state as on the total	+ electromagnet>Volt: 12
1st speed	Del. quantity cm3/: 31.5038.50
Supply-pump	+ > 1000s.: (31.J039.00)
pressure> bar: 7.007.60	†
Shutoff	†
- LaiahuanaanahNU-Lha 40	
electromagnet>Volt: 12	+
etectromagnet>volt: 12 2nd speed	† Electr. shutoff:
2nd speed 1/min: 1000 Supply-pump	Electr. shutoff:
2nd speed 1/min: 1000	Electr. shutoff:  1st speed 1/min: 375
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10	+ 1st speed 1/min: 375
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff	+ 1st speed 1/min: 375 + Del. quantity cm3/: 0.003.00
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12	1st speed
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  1000s.: (0.003.00)  Shutoff
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump	1st speed
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.093.00)  Shutoff electromagnet>volt: -
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  1000s.: (0.003.00)  Shutoff
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375 Shutoff
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve:	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375 Shutoff electromagnet>Volt: 12
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 15.0019.00
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve:	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500 Shutoff electromagnet>Volt: 12	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.093.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500 Shutoff electromagnet>Volt: 12 Overflow : 41.7083.40	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000S.: (0.093.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000S.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000S.: (3.0)
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500 Shutoff electromagnet>Volt: 12 Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40)	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/; 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500 Shutoff electromagnet>Volt: 12 Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 0.002.00
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)  3rd speed 1/min: 400
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00 quantity> cm3/10s: (40.60154.00)	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)  3rd speed 1/min: 400  Shutoff
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)  3rd speed 1/min: 400  Shutoff electromagnet>Volt: 12
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00 quantity> cm3/10s: (40.60154.00)	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)  3rd speed 1/min: 400  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 8.0014.00
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 500 Shutoff electromagnet>Volt: 12 Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00 quantity> cm3/10s: (40.60154.00) Oelivery-quant. and breakaway char.:	1st speed 1/min: 375  bel. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  bel. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)  3rd speed 1/min: 400  Shutoff electromagnet>Volt: 12
2nd speed 1/min: 1000 Supply-pump pressure> bar: 4.505.10 Shutoff electromagnet>Volt: 12 3rd speed 1/min: 500 Supply-pump pressure> bar: 3.504.10 Shutoff electromagnet>Volt: 12  Overlow quantity at overflow valve:  1st speed 1/min: 500 Shutoff electromagnet>Volt: 12  Overflow : 41.7083.40 quantity> cm3/10s: (26.7098.40) 2nd speed 1/min: 2000 Shutoff electromagnet>Volt: 12 Overflow : 55.60139.00 quantity> cm3/10s: (40.60154.00)	1st speed 1/min: 375  Del. quantity cm3/: 0.003.00  > 1000s.: (0.003.00)  Shutoff electromagnet>volt: -  Idle delivery:  1st speed 1/min: 375  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 15.0019.00  > 1000s.: (12.0022.00)  Dispersion cm3/: 3.0  > 1000s.: (3.0)  2nd speed 1/min: 465  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.002.00  > 1000s.: (0.002.00)  3rd speed 1/min: 400  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 8.0014.00

```
Inj.-qty.dif.measurement:
1st speed 1/min: 1000
Inj.-qty. cm3/ : 18.0..24.00 "
difference> 1000S.: (17.0..25.0) "
Shutoff
electromagnet>Volt: 12
            1/min: 1000
2nd speed
               cm3/: + 4.0..6.0
Ini.-aty.
difference> 1000S.: -
Shutoff
electromagnet Volt: 12
TD-travel dif.measurement:
correttore anticipo iniezione (SV):
           1/min: 1000
1st speed
                  : 0.40...0.60 "
TD-travel
difference>
                mm: -
Shutoff
electromagnet>Volt: 12
             1/min: 1000
2nd speed
                  : 0.80...1.80 '
TD-travel
Automatic starting fuel delivery:
             1/min: 400
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.00...60.00
            1000s.: (40.00...60.00)
             1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 70.00...100.00
            1000s.: (70.00...100.00)
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                  : 12.0
Mounting and assembly dimensions:
Designation
K
                mm: -
KF
                mm: 5.6...6.0
                mm: 1.6...2.0
MS
                mm: 1.9
SVS max.
                mm: 37.9...39.9
Ya
                mm: 40.9...46.5
Yb
Remarks:
                  : .00(12.00...22.00)3.
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : VMA 2,2 M Test scheet Edition : 18.02.91 : 07.11.89 replaces Calibrating oil : ISO-4113 : VE4/10F1600L379 Injection pump Type number : 0 460 404 067 Customer Part-No. : Customer-specific information Customer : HR 494 HT Engine KW: 68 Power TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer>: 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder assembly> : 1 688 901 000

Opening |

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length>

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200 Charge press. hPa: 1000 Setting value mm: 2.10...2.50

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1200 Charge press hPa: 1000

Setting value bar: 4,80...5.40

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 1200 Speed Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 61.00...62.00

Shutoff

electromagnet>Volt: 12 cm3/: 3.5 Dispersion 1000s.: (4.0)

Full-load del. w/out charge press.:

1/min: 600 Speed Del. quantity cm3/

1000s.: 52.00...53.00

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 400 Speed Del. quantity cm3/

> 1000s.: 11.00...15.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

1/min: 1690 Speed Charge press hPa: 1000 Del. quantity cm3/

1000s.: 42.00...48.00

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.00...100.00

mind> 1000s.: 60.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1200 Speed Charge press hPa: 1000

Inj.-qty. cm3/

difference> 1000S.: 19.0021.00 Shutoff	+ Charge press. hPa: 1000 + Supply-pump
electromagnet>Volt: 12	+ pressure> bar: 6.407.00
TD-travel dif.measurement	+ Shutoff
	+ electromagnet>Volt: 12
1.Speed 1/min: 1200	1
Charge press hPa: 1000	+ Overlow quantity at overflow valve:
TD-travel	+
difference> mm: 0.901.10	1st speed 1/min: 750
Shutoff	+ Charge press. hPa: 1000
electromagnet>Volt: 12	+ Shutoff
SP press.—dif.measurement	+ electromagnet>Volt: 12
or press. arranegadi enterit	Overflow : 41.7083.40
1.Speed 1/min: 1200	quantity> cm3/10s: (26.7098.40)
Charge press hPa: 1000	+ 2nd speed 1/min: 1600
Supply pump	+ Charge press. hPa: 1000
pressure>	+ Shutoff
difference> bar: 0.100.30	+ electromagnet>Volt: 12
Shutoff	+ Overflow : 55.60139.00
electromagnet Volt: 12	+ quantity> cm3/10s: (40.60154.00)
	+
Inspection-pump test specifications	+ Delivery-quant. and breakaway char.
Test specifications in parentheses	+
·	1
Timing-device characteristic:	1nd speed 1/min: 750*
	+ Charge-air pressure-setting
2nd speed 1/min: 1600	+ point> hPa: 200
Charge press hPa: 1000	+ Shutoff
TD travel mm: 3.904.70	electromagnet>Volt: 12
> mm: (3.605.00)	+ Del. quantity cm3/: 58.0059.00
Shutoff	+ > 1000s.: (55.5061.50)
electromagnet>Volt: 12	+ 3rd speed 1/min: 1750
3rd speed	+ Charge press. hPa: 1000
Charge press hPa: 1000	+ Shutoff
TD travel mm: 2.102.50	+ electromagnet>Volt: 12
> mm: (1.603.00)	+ Del. quantity cm3/: 0.003.00
Shutoff	+ > 1000s.: (0.003.00)
electromagnet>Volt: 12	+ 5th speed 1/min: 1690
4th speed 1/min: 1000	+ Charge press. hPa: 1000
Charge press hPa: 1000	+ Shutoff
TD travel mm: 1.001.80	+ electromagnet>Volt: 12
> mm: (0.702.10)	+ Del. quantity cm3/: 42.0048.00
Shutoff	+ > 1000s.: (39.0051.00)
electromagnet>Volt: 12	+ 9th speed 1/min: 1600
	+ Charge press. hPa: 1000
Supply-pump pressure characteristic:	+ Shutoff
supply pump pressure enaracter rector	electromagnet>Volt: 12
2nd speed 1/min: 750	Del. quantity cm3/: 53.5056.50
· · · · · · · · · · · · · · · · · · ·	1000s.: (52.0058.00)
Charge press. hPa: 1000 Supply—pump	
	1
pressure> bar: 3.003.60	+ Charge press. hPa: 1000
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
3rd speed 1/min: 1200	+ Del. quantity cm3/: 61.1062.10
Charge press. hPa: 1000	+ > 1000s.: (58.6064,60)
Supply-pump	+ 18th speed 1/min: 600
pressure> bar: 4.805.40	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 52.0053.00
th speed 1/min: 1600	10000 (40 50 55 50)

20th speed 1/min: 750 Charge press. hPa: 1000 Shutoff	+ :	1st speed 1/min: Shutoff electromagnet>Volt:	
electromagnet>Volt: 12 Del. quantity cm3/: 60.0063.00 > 1000S:: (58.5064.50)	+ 3	2nd speed 1/min: Charge press. hPa: TD-travel : difference> mm:	1200 1000 0.901.10
Mech. shutoff:	+ ;	Shutoff electromagnet>Volt:	
1st speed 1/min: 1600	1,	SP press.—dif.measur	rement.
Del. quantity cm3/: 0.003.00		pompa di mandata (FF	
> 1000s.: (0.003.00)		1st speed 1/min:	
Shutoff		Charge press. hPa:	1000
electromagnet>volt: 12	1 3	Supply pump-	N 1N N ZN
Electr. shutoff:	I	pressure > : : : : : : : : : : : : : : : : : :	(n 1n - n 3n)
Ecoti ondorr		Shutoff	(0.100.30)
1st speed 1/min: 400		electromagnet>Volt:	12
Del. quantity cm3/: 0.003.00		Shutoff	40
> 1000s.: (0.003.00)	1 6	electromagnet>Volt:	12
Idle delivery:	I /	Automatic starting f	uel delivery:
1st speed 1/min: 400 Shutoff		lst speed 1/min: Shutoff	250
electromagnet>Volt: 12		electromagnet>Volt:	
Del. quantity cm3/: 11.0015.00	+ 0	Del. quantity cm3/:	
> 1000s.: (8.5018.50) Dispersion cm3/: 3.5	†	> 1000s.:	(58.0088.00)
> 1000S.: (3.5)	I a	2nd speed 1/min:	45 <b>0</b>
2nd speed 1/min: 480		Shutoff	470
Shutoff	1	electromagnet>Volt:	12
electromagnet>Volt: 12		Del. quantity cm3/:	49.0063.00
Del. quantity cm3/: 2.008.00	+	> 1000s.:	(46.0066.00)
> 1000s.: (1.009.00)	† ,		400
3rd speed 1/min: 550 Shutoff		th speed 1/min: Shutoff	700
electromagnet>Volt: 12	•	electromagnet>Volt:	12
Del. quantity cm3/: 0.003.00		Pel. quantity cm3/:	
> 1000s.: (0.003.00)	<b>\( \)</b> >		(60.00100.00)
	+ .		
Load-dependent start of delivery:	† s	Shutoff electromagne	t:
Injqty.dif.measurement:	$\mathbf{I}$ c	ut-in	
1st speed 1/min: 1200			10.0
Charge press. hPa: 1000			12.0
Inj.—qty. cm3/ : 19.0021.00	+		
difference> 1000S.: (19.0021.00) Shutoff	† M	lounting and assembly	y dimensions:
electromagnet>Volt: 12		esignation	
4th speed 1/min: 1200	+ K	mm:	3,23,4
Charge press. hPa: 1000			5,66,0
Injqty. cm3/: 27.0035.00 difference> 1000S.: (27.0035.00)	† M	VS max. mm: (	0,61,0 1 3
Shutoff	I ,	vo max. mil.	1,70
electromagnet>Volt: 12	+ R	emarks:	
_	+	:	15
TD-travel dif.measurement: correttore anticipo iniezione (SV):	‡	:	.00(8.5018.50) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VMA Edition : 08.95 replaces : 03.12.92 Calibrating oil : ISO-4113 Injection pump : VE4/10F2100L414 Type number : 0 460 404 068 Customer Part-No. : Customer-specific information Customer : HR 425 CLI Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Opening bar: 130.00...133.00 Pressure> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Start of delivery Prestroke mm: -(from BDC): -Timing-device travel

Injection-pump setting values Test specifications in parentheses

1/min: 1000 Charge press. hPa: 1000 Setting value mm: 1.40...1.80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

```
1/min: 1000
 Speed
 Charge press hPa: 1000
Setting value bar: 4.20...4.80
 Shutoff
electromagnet>Volt: 12
 Full-load del. with charge press.:
Speed
             1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
  >
             1000s.: 65.50...66.50
Shutoff
electromagnet>Volt: 12
Dispersion
               cm3/: 3.0
             1000s.: (3.0)
Full-load del. w/out charge press.:
Speed
             1/min: 700
Del. quantity cm3/
            1000s.: 43.00...44.00
Shutoff
electromagnet>Volt: 12
Low-idle speed regulation
             1/min: 450
Speed
Del. quantity cm3/
            1000s.: 13.00...17.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
            1000s.: (3.0)
Full-load speed regulation
             1/min: 2300
Speed
Charge press hPa: 1000
Del. quantity cm3/
            1000s.: 40.00...46.00
Shutoff
electromagnet>Volt: 12
Start:
             1/min: 100
Speed
Del. quantity cm3/: 45.00...75.00
            1000s.: 45.00
mind>
Shutoff
electromagnet>Volt: 12
Load-dependent start of delivery:
Inj.-qty.dif.measurement:
```

1/min: 1500

Charge press hPa: 1000

cm3/difference> 1000s.: -28.0...-34.0 #

Speed

Inj.-qty.

Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 TD-travel dif.measurement Overlow quantity at overflow valve: 1/min: 1500 1.Speed 1st speed 1/min: 700 Charge press hPa: 1000 Charge press. hPa: 1000 TD-travel Shutoff difference> mm: -0.5...-0.7 # electromagnet>Volt: 12 Shutoff Overflow : 41.70...83.40 electromagnet>Volt: 12 quantity> cm3/10s: (26.70...98.40) 1/min: 2100 2nd speed Inspection-pump test specifications Charge press. hPa: 1000 Test specifications in parentheses Shutoff electromagnet>Volt: 12 Timing-device characteristic: Overflow : 55.60...139.00 quantity> cm3/10s: (40.60...154.00) 2nd speed 1/min: 1500 hPa: 1000 Charge press Delivery-quant. and breakaway char.: mm: 3.40...4.20 TD travel mm: (3.10...4.50) ind speed Shutoff 1/min: 700 electromagnet>Volt: 12 Charge-air pressure-setting 1/min: 1000 point> 3rd speed hPa: 350 hPa: 1000 Charge press LDA-stroke mm: 7.1 mm: 1.40...1.80 TD travel Shutoff mm: (0.90...2.30) electromagnet>Volt: 12 Del. quantity cm3/: 55.50...56.50 Shutoff 1000s.: (53.50...58.50) 1/min: 2550 electromagnet>Volt: 12 > 1/min: 700 4th speed 3rd speed hPa: 1000 Charge press. hPa: 1000 Charge press mm: 0.20...1.00 Shutoff TD travel mm: (0.00...1.30) > electromagnet>Volt: 12 Del. quantity cm3/: 0.00...8.00 Shutoff 1000s.: (0.00...8.00) electromagnet>Volt: 12 1/min: 2100 1/min: 2300 5th speed 5th speed Charge press. hPa: 1000 Charge press. hPa: 1000 mm: 6.10...6.90 Shutoff TD travel mm: (5.80...7.20) electromagnet>Volt: 12 Del. quantity cm3/: 40.00...46.00 Shutoff 1000s.: (39.00...47.00) electromagnet>Volt: 12 9th speed 1/min: 2100 Supply-pump pressure characteristic: Charge press. hPa: 1000 Shutoff electromagnet>Volt: 12
Del. quantity cm3/: 63.00...66.00
> 1000s.: (61.50...67.50) 1/min: 2100 1st speed Charge press. hPa: 1000 Supply-pump bar: 7.20...7.80 1/min: 1500 pressure> 12th speed Charge press. hPa: 1000 Shutoff Shutoff electromagnet>Volt: 12 1/min: 1000 2nd speed electromagnet>Volt: 12 Charge press. hPa: 1000 Del. quantity cm3/: 65.50...66.50 1000s.: (64.00...68.00) Supply-pump 1/min: 700 bar: 4.20...4.80 18th speed pressure> Charge press. hPa: -Shutoff electromagnet>Volt: 12 Shutoff 1/min: 700 3rd speed electromagnet>Volt: 12 Charge press. hPa: 1000 Del. quantity cm3/: 43.00...44,00 Supply-pump 1000s.: (41.00...46.00) pressure> bar: 3.20...3.80 20th speed 1/min: 700 Shutoff Charge press. hPa: 1000

Shutoff	Post land dollar Zud für unter
electromagnet>Volt: 12 Del. quantity cm3/: 65.5068.50	+ Part-load del.at 3rd injqty. + terza fermo della portata
> 1000s.: (64.0070.00)	+ stop (EGR set) + scarico) (ARF)
Delivery-quant. and breakaway char.:	gaz d'échappement-ARF)
	+
Inj.—qty.values,temp.—compensated	+ 1st speed 1/min: 1000 + Charge press. hPa: 1000 + Shutoff
Del. quantity cm3/: 0.008.00 > 1000s.: (0.008.00)	electromagnet>Volt: 12  Del. quantity cm3/: 43.0044.00  1000s.: (41.0046.00)
Electr. shutoff:	+ Automatic starting fuel delivery:
	1st speed 1/min: 400
1st speed 1/min: 450 Del. quantity cm3/: 0.003.00	+ Shutoff
> 1000s.: (0.003.00)	+ electromagnet>Volt: 12 + Del. quantity cm3/: 45.0075.00
Shutoff	1000s.: (45.0075.00)
electromagnet>volt: -	2nd speed 1/min: 550
Idle delivery:	+ Shutoff
1st speed 1/min: 450	+ electromagnet>Volt: 12 + Del. quantity cm3/: 25.0045.00
Shutoff	+ > 1000s.: (25.J045.00)
electromagnet>Volt: 12	†
Del. quantity cm3/: 13.0017.00	+ 4th speed 1/min: 100
> 1000S:: (10.0020.00) Dispersion cm3/: 3.0	+ Shutoff
Dispersion cm3/: 3.0 > 1000s.: (3.0)	<pre>+ electromagnet&gt;Volt: 12 + Del. quantity cm3/: 45.0075.00</pre>
2nd speed 1/min: 600 Shutoff	> 1000s.: (45.0075.00)
electromagnet>Volt: 12	Shutoff electromagnet:
Del. quantity cm3/: 0.005.00	† <sub>0.4</sub> :
> 1000s.: (0.005.00) 3rd speed 1/min: 500	+ Cut-in + >min voltage : 10.0
Shutoff	+ Rated voltage : 12.0
electromagnet>Volt: 12	+ Mateu voctage . 12.0
Del. quantity cm3/: 2.507.50	Mounting and assembly dimensions:
> 10008: (2.008.00)	† Designation
Load-dependent start of delivery:	+ K mm: 3.23.4
<pre>Injqty.dif.measurement:</pre>	+ KF mm: 5.25.6
	MS mm: 0.61.0
1st speed 1/min: 1500	LDA stroke mm: 7.1
Charge press. hPa: 1000	+ XK mm: 38.840.8
Injqty. cm3/ : -25.027.0"	+ XL mm: 37.246.8
difference> 1000s.: -	†
Shutoff electromagnet>Volt: 12	+ Ajustement Potentiometer:
-	Supply voltage
SP press.—dif.measurement:	pot. > volt. 5.0
pompa di mandata (FP):	Output volt
1st speed 1/min: 1500	pot. > volt: 2.31
Supply pump- pressure > : -0.10.3 "	Remarks:
difference> bar: -	:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : PENTA Edition : 09.08.95 replaces : 02.94 Calibrating oil : ISO-4113 Injection pump : VE6/12F1950L527 : 0 460 426 218 Type number Customer Part-No. : Customer-specific information Customer : PENTA : KAD / KAMD 42 CE Engine Power KW: 155 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder assembly> : 1 688 901 110 Opening bar: 250.00...253.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery mm: 0.3 Prestroke (from BDC): +-0.02(0.04)Injection-pump setting values Test specifications in parentheses

Supply-pump pressure Speed 1/min: 1500 Charge press hPa: 1500 Setting value bar: 7.70...8.30 Full-load del. with charge press.: Speed 1/min: 1500 Charge press. hPa: 1500 Del. quantity cm3/ 1000s.: 83.50...84.50 cm3/: 5.0Dispersion 1000s.: (5.0) Full-load del. w/out charge press.: 1/min: 600 Speed Del. quantity cm3/ 1000s.: 57.50...58.50 Low-idle speed regulation Speed 1/min: 325 Del. quantity cm3/ 1000s.: 21.00...25.00 Del. quantity cm3/: 14. 1000s.: (14.0 Full-load speed regulation 1/min: 2050 Speed Charge press hPa: 1500 Del. quantity cm3/ 1000s.: 57.00...63.00 Start: 1/min: 100 Speed Del. quantity cm3/: 20.00...70.00 1000s.: 20.00 mind> Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 2nd speed 1/min: 1800 Charge press hPa: 1500 mm: 4.10...5.10 TD travel mm: (3.70...5.50) 3rd speed 1/min: 1500 Charge press hPa: 1500 mm: 3.30...3.70 TD travel mm: (2.80...4.20) 4th speed 1/min: 1100 Charge press hPa: 1500 mm: 1.10...2.10 TD travel

mm: (0.70...2.50)

Speed

Timing-device travel

Charge press. hPa: 1500

1/min: 1500

Setting value mm: 3.30...3.70

5th speed 1/min: 1900 Charge press. hPa: 1500 TD travel mm: 4.505.50	+ 15th speed 1/min: 1250 Charge press. hPa: 1500
TD travel mm: 4.505.50 mm: (4.105.90)	+ Del. quantity cm3/: 84.5089.50 + > 10008.: (83.5090.50) + 18th speed 1/min: 600
Supply-pump pressure characteristic:	Charge press. hPa: - Del. quantity cm3/: 57.5058.50
1st speed	+ > 1000s.: (55.0061.00)
Charge press. hPa: 1500	+ 20th speed 1/min: 800
Supply-pump	+ Charge press, hPa: 1500
pressure> bar: 9.009.60 2nd speed 1/min: 1500	+ Del. quantity cm3/: 94.00101.0 + > 1000s.: (92.50102.50)
Charge press. hPa: 1500	I / 10008.: (92.30102.30.
Supply-pump	1
pressure> bar: 7.708.30	Mech. shutoff:
4th speed 1/min: 800	+
Charge press. hPa: 1500	+ 1st speed 1/min: 1900
Supply-pump	+ Charge press. hPa: 1500
pressure> bar: 5.205.80	+ Del. quantity cm3/: 0.003.00
Overlow quantity at overflow valve:	+ > 1000s.: (0.003.00) + Shutoff
overtow quantity at overitow valve.	+ electromagnet>volt: -
1st speed 1/min: 800	- Coot onagises voce.
Charge press. hPa: 1500	+ Electr. shutoff:
Overflow : 69.50152.90	+
quantity> cm3/10s: (54.50167.90)	+ 1st speed 1/min: 325
2nd speed 1/min: 1900	+ Charge press. hPa: -
Charge press. hPa: 1500	+ Del. quantity cm3/: 0.03.00
Overflow : 97.30180.70 quantity> cm3/10s: (82.30195.70)	+ > 1000s.: (0.003.00) + Shutoff
quantity> cm3/fus: (62.30193.70)	+ electromagnet>volt: 12.0
Delivery-quant. and breakaway char.:	T etecti dilagnet/vott. 12.0
octivoty quality and or calcular orial tr	Idle delivery:
	+
1nd speed 1/min: 800	+ 1st speed 1/min: 325
Charge-air pressure-setting	+ Del. quantity cm3/: 21.0025.00
point> hPa: 750	+ > 1000s.: (18.0028.00)
LDA-stroke mm: 7.1	+ 2nd speed 1/min: 580
Del. quantity cm3/: 85.0086.00 > 1000s.: (81.5089.50)	+ Del. quantity cm3/: 0.003.00 + > 1000s.: (0.003.00)
2nd speed 1/min: 2300	10003 (0.003.00)
Charge press. hPa: 1500	+ Automatic starting fuel delivery:
Del. quantity cm3/: 0.003.00	+
> 1000s.: (0.003.00)	+ 1st speed 1/min: 275
5th speed 1/min: 2050	+ Del. quantity cm3/: 50.00100.00
Charge press. hPa: 1500	+ > 1000s.: (50.00100.00)
Del. quantity cm3/: 57.0063.00	<b>†</b>
> 1000s.: (52.0068.00)	+ 2nd speed 1/min: 400
8th speed	Del. quantity cm3/: 30.0060.00
Charge press. hPa: 1500 Del. quantity cm3/: 0.0025.00	† > 1000s.: (30.0060.00)
> 1000s.: (0.0025.00)	4th speed 1/min: 100
9th speed	Del. quantity cm3/: 20.0070.00
Charge press. hPa: 1500	+ > 1000s.: (20.0070.00)
Del. quantity cm3/: 75.5079.50	+
> 1000s.: (74.0081.00)	+ Shutoff electromagnet:
12th speed	+
Charge press. hPa: 1500	+ Cut-in
Del. quantity cm3/: 83.5084.50	Del. quantity cm3/: 20.0070.00 > 1000s.: (20.0070.00)  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0
> 1000s.: (81.0087.00)	+ Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: -

MS mm: 0.8...1.2

LDA stroke

mm: 7.1 mm: 37.2...39.2 mm: 49.1...56.9 Ya Yb

Remarks:

: FB = 1.70 MM

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Operate control lever after each manifold-pressure compensator pressure change.

Pushing electromagnet.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : PENTA : 09.08.95 Edition replaces : 03.94 Calibrating oil : ISO-4113

Injection pump : VE6/12F1950L528 Type number : 0 460 426 219

Customer Part-No. :

Customer-specific information Customer : PENTA

Engine : KAD 42

KW: 169 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 110

Opening

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length>

Start of delivery

Prestroke mm: 0.3

(from BDC): +-0.02(0.04)

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 1500

Setting value mm: 4.10...4.30 Supply-pump pressure

1/min: 1500 Speed Charge press hPa: 1500

Setting value bar: 8.00...8.60

Full-load del. with charge press.:

1/min: 1800 Speed Charge press. hPa: 1500

Del. quantity cm3/

1000s.: 88.50...89.50

cm3/: 5.0 Dispersion 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 600

Del. quantity cm3/

1000s.: 42.00...43.00

Low-idle speed regulation

1/min: 325 Speed

Del. quantity cm3/

1000s.: 7.00...11.00

Del. quantity cm3/: 5.0 1000s.: (5.0)

Full-load speed regulation

1/min: 2180 Speed Charge press hPa: 1500

Del. quantity cm3/

1000s.: 9.00...15.00

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.00...90.00

1000s.: 40.00 mind>

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1900 2nd speed hPa: 1500 Charge press

mm: 6.20...7.00 TD travel mm: (5.90...7.30)

3rd speed 1/min: 1500 Charge press hPa: 1500

mm: 4.10...4.30 TD travel

> mm: (3.50...4.90)
4th speed 1/min: 1100
Charge proces

Charge press hPa: 1500

mm: 1.00...1.80 TD travel mm: (0.70...2.10)

	+ 18th speed 1/min: 600
Supply-pump pressure characteristic:	+ Charge press. hPa: -
Ant mand 4/min 4000	+ Del. quantity cm3/: 42.0043.00
1st speed 1/min: 1900	+ > 1000s.: (39.5045.50)
Charge press. hPa: 1500	†
Supply-pump pressure> bar: 9.109.70	## Mech. shutoff:
2nd speed 1/min: 1500	T Mech. Shutorr.
Charge press. hPa: 1500	1st speed 1/min: 1950
Supply-pump	Charge press. hPa: 1500
pressure> bar: 8.008.60	+ Del. quantity cm3/: 0.003.00
3rd speed 1/min: 1100	+ > 1000s.: (0.003.00)
Charge press. hPa: 1500	+ Shutoff
Supply-pump	<pre>+ electromagnet&gt;volt: -</pre>
pressure> bar: 6.807.40	+
	+ Electr. shutoff:
Overlow quantity at overflow valve:	+
4	+ 1st speed 1/min: 325
1st speed 1/min: 600	+ Del. quantity cm3/: 0.003.00
Charge press. hPa: 1500	+ > 1000s.: (0.003.00)
Overflow : 88.90133.40	+ Shutoff
quantity> cm3/10s: (73.90148.40)	+ electromagnet>volt: 12.0
2nd speed 1/min: 1950	Talla del diverse
Charge press. hPa: 1500 Overflow : 97.30180.70	† Idle delivery:
quantity> cm3/10s: (82.30195.70)	1st speed 1/min: 325
quarterty (1107 103. (02.30173210)	Del. quantity cm3/: 7.0011.00
Delivery-quant. and breakaway char.:	1000s.: (4u14.00)
becivery quarter and breakandy endit:	+ Dispersion cm3/: 5.0
	1000s.: (5.0)
1nd speed 1/min: 800	+ 2nd speed 1/min: 450
Charge-air pressure-setting	+ Del. quantity cm3/: 0.003.00
point> hPa: 750	+ > 1000s.: (0.003.00)
LDA-stroke mm: 7.5	+
Del. quantity cm3/: 64.5065.50	Automatic starting fuel delivery:
> 1000s.: (61.0069.00)	+
2nd speed 1/min: 2300	+ 1st speed 1/min: 275
Charge press. hPa: 1500	+ Del. quantity cm3/: 50.00100.00
Del. quantity cm3/: 0.003.00	+ > 1000s.: (50.00100.00)
> 1000s.: (0.003.00)	+
5th speed 1/min: 2180	2nd speed 1/min: 450
Charge press. hPa: 1500	+ Del. quantity cm3/: 25.0055.00
Del. quantity cm3/: 9.0015.00	+ > 1000s.: (25.0055.00)
> 1000s.: -	† ///
9th speed 1/min: 1950	+ 4th speed 1/min: 100
Charge press. hPa: 1500	+ Del. quantity cm3/: 40.0090.00 + > 1000s.: (40.0090.00)
Del. quantity cm3/: 86.0090.00 > 1000s.: (84.5091.50)	10003.: (40.0090.00)
12th speed 1/min: 1800	Shutoff electromagnet:
Charge press. hPa: 1500	T Silutori etectrollagriet.
Del. quantity cm3/: 88.5089.50	T Cut-in
> 1000s.: (86.0092.00)	>min voltage : 10.0
15th speed 1/min: 1500	Rated voltage : 12.0
Charge press. hPa: 1500	1,000 100000
Del. quantity cm3/: 88.5093.50	Mounting and assembly dimensions:
> 10008.: (87.5094.50)	1
17th speed 1/min: 1250	Designation
Charge press. hPa: 1500	+ K mm: -
Del. quantity cm3/: 83.5088.50	+ KF mm: KOT
> 1000H.: (82.5089.50)	+ MS mm: 1.61.9

LDA stroke

Ya

mm: 7.5 mm: 37.2...39.2 mm: 55.1...62.9

Yb

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor—head end

Pushing electromagnet.

Operate control lever after each manifold-pressure compensator pressure change.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : VWW
Edition : 06.95
replaces : 03.12.91
Calibrating oil : ISO-4113

Injection pump : VE4/8F2100R357 Type number : 0 460 484 031

Customer Part-No. :

Customer-specific information

Customer : VW

Engine : 028.A 1.91.

Power KW: 45

TEST BENCH REQUIREMENTS

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Indicator setting Piston stroke> mm: 1.0

Outlet> mm: 1.0

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 3.10...3.50

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.70...6.30

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

> 1000s.: 35.50...36.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.0 > 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 2.00...3.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400

Del. quantity cm3/

> 1000s.: 10.00...14.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 35.00...85.00

mind> 1000s.: 35.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/

difference> 1000s.: 5.00...11.00

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1. Speed 1/min: 1250

TD-travel

difference> mm: 0.30...0.50

Shutoff

electromagnet>Volt: 12 SP press.-dif.measurement

1.Speed 1/min: 1250

L23

Supply pump pressure> difference> bar:	0.500.90	<del> </del>	Delivery—quant. and	breakaway char.:
Shutoff electromagnet Volt:	12	†	3rd speed 1/min:	2650
Inspection-pump test Test specifications		-	Shutoff electromagnet>Volt: Del. quantity cm3/:	
Timing-device charac	` <del>1</del>	+	> 1000s.: 5th speed 1/min:	(0.006.00)
2nd speed 1/min:	1700	F	Shutoff electromagnet>Volt:	12
> mm:	5.005.80 - (4.706.10) -	<b>+</b>	Del. quantity cm3/: > 1000s.:	(8.0016.00)
Shutoff electromagnet>Volt:	12	-	8th speed 1/min: Shutoff	2250
3rd speed 1/min:		[	electromagnet>Volt:	12
TD travel mm:	3.103.50	-	Del. quantity cm3/:	18.0028.00
	(2.604.00)	-		(17.0029.00)
Shutoff electromagnet>Volt:	12		9th speed 1/min: Shutoff	1850
4th speed 1/min:		_	electromagnet>Volt:	12
	1.001.80	L	Del. quantity cm3/:	32.0034.00
	(0.702.10)	-		(30.8035.20)
Shutoff electromagnet>Volt: 1	12		10th speed 1/min: Shutoff	300
ates to anagrie to total	-	_	electromagnet>Volt:	12
Supply-pump pressure	characteristic:	<u> </u>	Del. quantity cm3/:	29J34.50 (27.0037.00)
1st speed 1/min: 1 Supply-pump	1850	_	12th speed 1/min: Shutoff	
pressure> bar: 7	7.107.70	_	electromagnet>Volt:	
	(6.907.90)	-	Del. quantity cm3/:	
Shutoff electromagnet>Volt: 1	12	_	> 1000s.: 20th speed 1/min:	(33.8038.20)
2nd speed 1/min: 1		-	Shutoff	, 50
Supply-pump	+	-	electromagnet>Volt:	
	5.706.30	-	Del. quantity cm3/:	
> bar: ( Shutoff	(5.506.50)	-	> 1000s.:	(29.0035.00)
electromagnet>Volt: 1	12	-		
3rd speed 1/min: 7		-		
Supply-pump	50 5 10	-	Electr. shutoff:	
	4.505.10 (4.305.30)	-	1st speed 1/min:	425
Shutoff	1	-	Del. quantity cm3/:	
electromagnet>Volt: 1	12	-	> 1000s.:	(0.003.00)
Overlow quantity at o	overflow valve:		Shutoff electromagnet>volt:	-
1st speed 1/min: 7 Shutoff	<sup>2</sup> 50	-	Damper set qty.:	
electromagnet>Volt: 1		-	LFG-setting:	
	1.7083.40	•	Tall = = = = 1 = 1 = 2	
quantity> cm3/10s: (2nd speed 1/min: 1		•	Idle delivery:	
Shutoff	1	-	1st speed 1/min:	425
electromagnet>Volt: 1			Shutoff	-
Overflow : 5	5.60138.90		electromagnet Volt:	
quantity> cm3/10s: (	40.70153.90) +	•	Del. quantity cm3/:	7.009.00

1000s.: (4.00...12.00) > electromagnet>Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) High Idle: 1st speed 1/mi: 500 1/min: 380 2nd speed Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 Del. quantity cm3/: 7.00...9.00 > 1000s.: 4.00...12.00) Del. quantity cm3/: 18.00...38.00 > 1000s.: (18.00...38.00) 1/min: 100 Rest delivery: 4th speed Shutoff 1/min: 550 1st speed electromagnet>Volt: 12 Shutoff Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) electromagnet>Volt: 12 Del. quantity cm3/: 2.00...3.00 > 1000s.: (0.50...4.50) 2nd speed 1/min: 500 Shutoff electromagnet: 2nd speed Shutoff Cut-in electromagnet Volt: 12 >min voltage : 10.0 Del. quantity cm3/: 2.50...4.50 Rated voltage : 12.0 1000s.: (1.00...6.00) Mounting and assembly dimensions: Load-dependent start of delivery: Ini.-qty.dif.measurement: Designation mm: 3.2...3.4 KF mm: 5.1 ..5.5 3rd speed 1/min: 1250 cm3/: 5.00...11.00 Inj.-qty. mm: 1.2...1.5 MS difference> 1000s.: (4.00...12.00) SVS max. mm: 4.5 mm: 17.0...19.0 Shutoff XK electromagnet>Volt: 12 mm: 10.6...14.0 XL 1/min: 1250 5th speed cm3/: 0.00...3.00 Inj.-qty. Remarks: difference> 1000S.: (0.00...3.00) : Shutoff electromagnet>Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1/min: 1250 1st speed TD-travel : 0.30...0.50 mm: (0.30...0.50) difference> Shutoff electromagnet>Volt: 12 1/min: 1250 3rd speed : 0.70...1.10 TD-travel difference> mm: (0.40...1.40) Shutoff electromagnet>Volt: 12 3rd speed 1/min: 1250 Supply pumppressure > : 0.50...0.90 difference> bar: (0.30...1.10) Shutoff electromagnet>Volt: 12 Automatic starting fuel delivery: 1/min: 180 1st speed

Shutoff

AFB/AFB BOSCH-INJ.-PUMP TEST SPECIFICATIONS valve > Volt: 12.0 Shutoff Note inst. in remarks column electromagnet>Volt: 12.0 Test scheet : FORD Supply-pump pressure Edition : 09.08.95 replaces 1/min: 1500 Speed Calibrating oil : ISO-4113 Setting value bar: 6.40...7.00 KSB/AFE Injection pump : VE4/8F2400R615 valve > Volt: 12.0 Type number : 0 460 484 079 Shutoff Customer Part-No. : electromagnet>Volt: 12.0 Full-load del. w/out charge press.: Customer-specific information Customer 1/min: 1750 : FORD Speed Del. quantity cm3/ Engine : 1.8 IDI 1000s.: 31.0...31.4 KSB/AFB TEST BENCH REQUIREMENTS valve > Volt: 12.0 Shutoff Overflow restricti: 1 463 456 303 electromagnet>Volt: 12.0 cm3/: 2.0 Dispersion Calibrating-oil 1000s.: (3.0) return>temp. > °C with>thermometer> : 40.00...48.00 Residual-Delivery Setting Electronically> : 42.00...50.00 Speed 1/min: 530 Inlet press., bar: 0.30...0.40 Del. quantity cm3/ 1000s.: 0.20...5.80 > Calibrating nozzle-holder KSB/AFB : 1 688 901 022 assembly> valve > Volt: 12.0 Shutoff Opening | electromagnet Volt: 12.0 bar: 130.00...133.00 Pressure> Dispersion cm3/: 2.01000s.: (2.5) Test inj. tubing : 1 680 750 073 Full-load speed regulation Outside diameter : 6.00 Speed 1/min: 2625 x Wall>thickness : 2.00 Del. quantity cm3/ 1000s.: 9.50...15.50 x Length> mm: 450 > KSB/AFB Start of delivery valve > Volt: 12.0 Shutoff Prestroke mm: -(from BDC): electromagnet>Volt: 12.0 Start of delivery block Start: Piston stroke mm: 0.85 mm: +-0.02(0.05)1/min: 100 Speed Del. quantity cm3/: 50.00...70.00 Outlet > : B 1000s.: 50.00 mind> Injection pump setting values KSB/AFB Test specifications in parentheses > Volt: 12.0 Valve Shutoff Timing-device travel electromagnet>Volt: 12.0 1/min: 1500 Load-dependent start of delivery:

Inj.-qty.dif.measurement:

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Setting value mm: 6.50...6.90

		+	1st speed 1/min:	750
Speed 1/min:	1200	+	Supply-pump	
Injqty. cm3/		+	pressure> bar:	4.104.70
difference> 1000s.:	-5.213.2 <b>*</b>	1	KSB/AFB	
KSB/AFB		1	valve > Volt:	12.0
valve > Volt:	12.0	1	Shutoff	
Shutoff		1	electromagnet>Volt:	12 0
electromagnet>Volt:	12.0	1	2nd speed 1/min:	
TD-travel dif.measu		1	Supply-pump	1500
To travet arrineasa	ii chici ic	T		6.407.00
1.Speed 1/min:	1200	T	KSB/AFB	0.407.00
TD-travel	1200	T		42.0
	-1.51.7 *	Ť	valve > Volt:	12.0
	-1.51./ ×	+	Shutoff	40.0
KSB/AFB	12.0	†	electromagnet>Volt:	
<pre>valve &gt; Volt:</pre>	12.0	+	3rd speed 1/min:	2000
Shutoff		+	Supply-pump	
electromagnet>Volt:	12.0	+	pressure> bar:	7.908.50
		+	KSB/AFB	
Inspection pump tes	t specifications	+	valve > Volt:	12.0
Test specifications		+	Shutoff	
•	•	1	electromagnet>Volt:	12.0
Timing-device chara	cteristic:	1		,2,0
		1	Overlow quantity at	overflow valve.
1st speed 1/min:	ፈባብ	1	over con quarterey at	Over real valve.
	3.43.6	1	1st speed 1/min:	<b>ን</b> ኖበ
> mm:	(2.54.5)	T	KSB/AFB	7 ) U
KSB/AFB	(2.34.3)	T		12.0
		T	valve > Volt:	(2.11
valve > Volt:		+	Shutoff	40.0
electromagnet>Volt:		+	electromagnet>Volt:	
2nd speed 1/min:		+		41.7083.40
	2.805.20	+	quantity> cm3/10s:	
	(2.705.30)	+	2nd speed 1/min:	2200
KSB/AFB		+	KSB/AFB	
valve > Volt:	-	+	<pre>valve &gt; Volt:</pre>	12.0
Shutoff		+	Shutoff	
electromagnet>Volt:	12.0	į.	electromagnet>Volt:	12.0
3rd speed 1/min:	800	1	Overflow :	55.60 152.90
	2.803.60	1	quantity> cm3/10s:	
	(2.404.00)	1	quarte reys cmor root	(41.00(52.70)
KSB/AFB	(2.404.00)	$\mathbf{I}$	Delivery-quant. and	hneakauay chan
	12.0	T	betivery quart. and	Dicakaway Char.
	12.0	T		
Shutoff	12.0	T	And an add Air to	2050
electromagnet>Volt:		+	1nd speed 1/min:	2950
4th speed 1/min:		†	KSB/AFB	45.5
	6.506.90	+	<pre>valve &gt; Volt:</pre>	12.0
	(6.007.40)	+	Shutoff	
KSB/AFB		+	electromagnet>Volt:	
valve > Volt:	12.0	+	Del. quantity cm3/:	
Shutoff		+	> 1000s.:	(0.002.00)
electromagnet>Volt:	12.0	+	2nd speed 1/min:	2625
5th speed 1/min:		1	KSB/AFB	
	8.409.20	1	<pre>valve &gt; Volt:</pre>	12.0
	(8.009.60)	1	Shutoff	
KSB/AFB		1	electromagnet Volt:	12 N
valve > Volt:	12 0	1	Del. quantity cm3/:	
Shutoff	12.0	I		(8.0017.0)
	12 0	T		
electromagnet>Volt:	12.0	T	3rd speed 1/min:	الادے
<b>.</b>		†	KSB/AFB	43.0
Supply-pump pressure	cnaracteristic:	+	valve > Volt:	12.0
		+	Shutoff	

electromagnet>Volt: 12.0	† 1st speed 1/mi: 570
Del. quantity cm3/: 15.023.0	+ KSB/AFB
> 1000s.: (13.025.0)	+ valve > Volt: 12.0
4th speed 1/min: 2400 KSB/AFB	+ Shutoff + electromagnet>Volt: 12.0
valve > Volt: 12.0	
	Del. quantity cm3/: 11.015.00
Shutoff	+ > 1000s.: (9.0017.00)
electromagnet>Volt: 12.0	†
Del. quantity cm3/: 25.127.1 > 1000S.: (24.128.1)	Rest delivery:
5th speed 1/min: 1750	1st speed
KSB/AFB	+ KSB/AFB
valve > Volt: 12.0	+ valve > Volt: 12.0
Shutoff	Shutoff
electromagnet>Volt: 12.0	+ electromagnet>Volt: 12.0
Del. quantity cm3/: 31.031.40	+ Del. quantity cm3/: 0.205.80
> 1000s.: (29.532.90)	+ > 1000s.: (0.205.80)
6th speed 1/min: 1000	+
KSB/AFB	Load-dependent start of delivery:
valve > Volt: 12.0	Injqty.dif.measurement:
Shutoff	i ingraprameadarement.
electromagnet>Volt: 12.0	1st speed
Del. quantity cm3/: 28.731.7	Injqty. cm3/ : -5.07.0 "
> 1000s.: (27.932.5)	difference> 1000s.: -
7th speed 1/min: 750	KSB/AFB
KSB/AFB	+ valve > Volt: 12.0
valve > Volt: 12.0	+ Shutoff
Shutoff -	+ electromagnet>Volt: 12.
electromagnet>Volt: 12.0	+ 2nd speed 1/min: 1250
Del. quantity cm3/: 28.531.5	Injqty. cm3/: 2.08.0 Z'
> 1000s.: (27.732.3)	difference> 1000s.: -
-	KSB/AFB
,	valve > Volt: 12.0
	Shutoff
Floren chuseff.	· · · · · · · · · · · · · · · · · · ·
Electr. shutoff:	electromagnet Volt: 12.0
4.4	
1st speed 1/min: 425	TD-travel dif.measurement:
Del. quantity cm3/: 0.003.00	correttore anticipo iniezione (SV):
> 1000s.: (0.003.00)	1st speca
Shutoff	- TD-travel : -1.72.5 '
electromagnet>volt: -	- difference> mm: -
KSB/AFB	- KSB/AFB
valve > Volt: 12.0	- valve > Volt: 12.0
-	- Shutoff
Damper set qty.:	electromagnet>Volt: 12.0
	-
LFG-setting:	SP pressdif.measurement:
	pompa di mandata (FP):
Idle delivery:	- 1st speed 1/min: 1200
200 000110171	- Supply pump-
1st speed 1/min: 425	- pressure > : -0.10.3 "
KSB/AFB	
	- difference> bar: -
valve > Volt: 12.0	KSB/AFB
Shutoff	valve > Volt: 12.0
electromagnet Volt: 12.0	- Shutoff
Del. quantity cm3/: 6.0010.0	electromagnet>Volt: 12.0
> 1000s.: (4.0012.00)	_
<del>- }</del>	<ul> <li>Automatic starting fuel delivery:</li> </ul>
High Idle:	•
<del>-</del>	- 1st speed 1/min: 200

KSB/AFB valve > Volt: 12.0 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 50.00...80.00 1000s.: LFG/LL VH-VL 1/min: 500 2nd speed KSB/AFB > Volt: 12.0 valve Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 24.00...36.00 1000s.: LFG/LL VH-VL 1/min: 275 3rd speed KSB/AFB valve > Volt: 12.0 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 50...80 VH/VL 1000s.: LFG/ERHOHTER LL 4th speed 1/min: 100 KSB/AFB Volt: 12.0 valve Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 50...70 VH/VL 1000s.: LFG ERHÖHTER LL Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 K KF mm: KOT MS mm: 2.1...2.3 mm: 31.6...35.6 Ya mm: 62.9...71.5 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control

lever on distributor-head end

Z = Absolute delivery

MO1

1/min: 1500 Speed BOSCH-INJ.-PUMP TEST SPECIFICATIONS Setting value mm: 5.40...5.80 AFB/AFB Note inst. in remarks column valve Volt: -Shutoff : FORD Test scheet electromagnet>Volt: 12.0 Edition : 09.08.95 replaces Supply-pump pressure Calibrating oil : ISO-4113 Speed 1/min: 1500 Infection pump : VE4/8F2400R622 Setting value bar: 6.50...7.10 : 0 460 484 081 Type number KSB/AFB Customer Part-No. : valve > Volt: -Shutoff electromagnet>Volt: 12.0 Customer-specific information Customer : FORD Full-load del. w/out charge press.: : 1.8IDI Engine Speed 1/min: 1500 Del. quantity cm3/ Power KW: 44 1000s.: 28.8...29.2 KSB/AFB 11 TEST BENCH REQUIREMENTS Volt: valve Shutoff Overflow restricti: 1 463 456 303 electromagnet>Volt: 12.0 Dispersion cm3/: 2.0 Calibrating-oil 1000s.: (3.0) return>temp. > °C with>thermometer> : 40.00...48.00 Residual-Delivery Setting Electronically> : 42.00...50.00 1/min: 500 Speed Inlet press., bar : 0.30...0.40 Del. quantity cm3/ > 1000s.: 2.50...3.5u Calibrating nozzle-holder KSB/AFB assembly> : 1 688 901 022 valve > Volt: -Shutoff Opening electromagnet Volt: 12.0 bar: 130.00...133.00 Pressure> Full-load speed regulation Test inj. tubing : 1 680 750 073 1/min: 2550 Speed Del. quantity cm3/ Outside diameter : 6.00 1000s.: 17.0...23.0 x Wall>thickness : 2.00 KSB/AFB x Length> mm: 450 > Volt: valve Shutoff Start of delivery electromagnet>Volt: 12.0 Prestroke mm: -(from BDC): -Start: Start of delivery block 1/min: 100 Speed Del. quantity cm3/: 50.00...70.00 Piston stroke mm: 0.85 1000s.: 50.00 mm: +-0.02(0.05)mind> Outlet > : B KSB/AFB Valve > Volt: -Injection pump setting values Shutoff Test specifications in parentheses electromagnet>Volt: 12.0 Timing-device travel Load-dependent start of delivery:

Inj.-qty.dif.measurement:

		4000	+	1st speed 1/min:	750
Speed	1/min:	1200	+	Supply-pump	
	cm3/		†	•	4.304.90
	> 10005.:	-6.610.4 *	+	KSB/AFB	
KSB/AFB			†	valve > Volt:	-
	<pre>&gt; Volt:</pre>	_	†	Shutoff	40.0
Shutoff		40.0	†	electromagnet>Volt:	
electromagn			+	2nd speed 1/min:	1500
TD-travel o	dif.measu	rement	+	Supply-pump	
			+		6.57.1
1.Speed	1/min:	1200	+	KSB/AFB	
TD-travel			+	valve > Volt:	
difference>	> mm:	- 0.70.9 *	+	Shutoff	
KSB/AFB			+	electromagnet>Volt:	
valve >	<pre>&gt; Volt:</pre>	_	+	3rd speed 1/min:	2400
Shutoff			+	Supply-pump	
electromagn	net>Volt:	12.0	+		9.09.60
			+	KSB/AFB	
Inspection-	pump tes	t specifications	+	valve > Volt:	~
Test specif	fications	in parentheses	+	Shutoff	
			+	electromagnet>Volt:	12.0
Timing-devi	ice chara	cteristic:	+	_	
-			+	Overlow quantity at	overflow valve:
1st speed	1/min:	400	+	,	
TD travel	ताताः	2.72.9	+	1st speed 1/min:	450
>		(1.83.8)	1	KSB/AFB	
KSB/AFB			1	valve > Volt:	-
	Volt:	12.0	1	Shutoff	
electromagn			1	electromagnet>Volt:	12.0
2nd speed	1/min:		1		41.7083.40
TD travel		3.505.90	1	quantity> cm3/10s:	
>		(3.406.00)	1	2nd speed 1/min:	2400
KSB/AFB		(0. (00.0)	1	KSB/AFB	C+00
	Volt:	12 N	1	valve > Volt:	
Shutoff	vocc.	12.0	1	Shutoff	
electromagn	e+>\/al+•	12 0	I	electromagnet>Volt:	12 0
3rd speed			I		55.60152.90
TD travel		1.62.4	I	quantity> cm3/10s:	
> Cravec		(1.22.8)	T	qualitity> clib/105.	(40.00107.70)
KSB/AFB	11832.	(1.22.0)	Ι	Delivery-quant. and	hnookayay ahan
valve >	Volt:	_	I	betivery quart. and	breakaway char.
Shutoff	vott.	_	T		
electromagn	0+2/01+.	12.0	Τ	1nd speed 1/min:	2050
	1/min:		T	KSB/AFB	2930
4th speed TD travel	1/10/113:	5.45.8	T	valve > Volt:	_
> travet		(4.96.3)	T		_
	11811.	(4.96.3)	T	Shutoff	12.0
KSB/AFB	مطالسا		T	electromagnet>Volt:	
	Volt:	_	Ţ	Del. quantity cm3/:	
Shutoff	_4>U_14.	12.0	<b>T</b>	,0000	(0.002.00)
electromagn			T	2nd speed 1/min:	2025
5th speed	1/min:		†	KSB/AFB	
TD travel		9.19.9	†	valve > Volt:	-
>	mm:	(8.710.3)	†	Shutoff	40.0
KSB/AFB	14. 14		†	electromagnet Volt:	12.0
	Volt:	-	†	Del. quantity cm3/:	
Shutoff	1511 11	42.0	†		(7.5019.5)
electromagn	et>volt:	72.0	†	3rd speed 1/min:	2550
			†	KSB/AFB	
Subb(A-bnub	pressure	characteristic:	+	valve > Volt:	-
			+	Shutoff	

electromagnet>Volt: 12.0	+ Shutoff
Del. quantity cm3/: 17.023.0	+ electromagnet Volt: 12
> 1000s.: (15.524.5)	+ Del. quantity cm3/: 7.009.0
4th speed 1/min: 2400 KSB/AFB	† > 1000s.: (4.012.0)
valve > Volt: - Shutoff	High Idle:
electromagnet>Volt: 12.0	+ 1st speed 1/mi: 525
Del. quantity cm3/: 28.330.3	+ KSB/AFB
> 1000s.: (27.331.3)	+ valve > Volt: -
5th speed 1/min: 1500 KSB/AFB	Shutoff electromagnet>Volt: 12.0
valve > Volt: -	Del. quantity cm3/: 12.014.00
Shutoff	
	+ > 1000s.: (9.017.0)
electromagnet>Volt: 12.0	T 8 4-11-11-11-11
Del. quantity cm3/: 28.829.2	† Rest delivery:
> 1000s.: (27.331.7)	†
6th speed 1/min: 1000 KSB/AFB	+ 1st speed 1/min: 500 + KSB/AFB
valve > Volt: -	+ valve > Volt: -
Shutoff	+ Shutoff
electromagnet>Volt: 12.0	+ electromagnet>Volt: 12.0
Del. quantity cm3/: 27.830.8	Del. quantity cm3/: 2.53.5
> 1000s.: (27.031.6)	+ > 1000s.: (0.25.8)
7th speed 1/min: 750	10000:: (0:2:::5:0)
KSB/AFB	T Lood-donondont stant of delivery
valve > Volt: -	+ Load-dependent start of delivery:
Shutoff	Injqty.dif.measuremen+:
electromagnet>Volt: 12.0	+ 1st speed 1/min: 1200
Del. quantity cm3/: 26.929.9	+ Injqty. cm3/ : -8.410.4"
> 1000s.: (26.130.7)	+ difference> 1000s.: -
8th speed 1/min: 450	+ KSB/AFB
KSB/AFB	+ valve > Volt: -
valve > Volt: -	Shutoff
Shutoff	
	+ electromagnet>Volt: 12.0
electromagnet>Volt: 12.0	+ 2nd speed 1/min: 1200
Del. quantity cm3/: 29.533.5	+ Injqty. cm3/: 2.08.0 Z'
> 1000s.: (28.734.3)	+ difference> 1000S.: -
	+ KSB/AFB
	+ valve > Volt:-
	+ Shutoff
Electr. shutoff:	+ electromagnet Volt: 12.0
	+ 3rd speed 1/min: 1200
1st speed 1/min: 425	+ Charge press. hPa: ALFB
Del. quantity cm3/: 0.003.00	+ Injqty. cm3/: 2.08.0 Z*
> 1000s.: (0.003.00)	+ difference> 1000s.: -
Shutoff	+ KSB/AFB
	+ valve > Volt: 12.0
electromagnet>volt: -	+ Shutoff
KSB/AFB	
valve > Volt: -	+ electromagnet>Volt: 12.0
	<b>†</b>
Damper set qty.:	+ TD-travel dif.measurement:
	<pre>+ correttore anticipo iniezione (SV):</pre>
LFG-setting:	+ 1st speed 1/min: 1200
<del>-</del>	+ TD-travel : -0.61.4
Idle delivery:	+ difference> mm: -
•	+ KSB/AFB
1st speed 1/min: 450	+ valve > Volt: -
KSB/AFB	+ Shutoff
valve > Volt: -	electromagnet>Volt: 12.0
VOLVE / VOLL.	T according Alice Note: 15.0

1/min: 1200 1000s.: LFG/LL VH-VL 2nd speed Charge press. hPa: ALFB TD-travel : 0.0...0.6 Z\* 3rd speed 1/min: 275 difference> mm: -KSB/AFB KSB/AFB valve > Volt: -> Volt: 12.0 valve Shutoff Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 50...70 VH-VL electromagnet>Volt: 12.0 1000s.: LFG/ERHOHTER LL SP press.-dif.measurement: pompa di mandata (FP): 1/min: 500 4th speed 1st speed 1/min: 1200 KSB/AFB Supply pumpvalve Volt: -: -0.1...0.3 " pressure > Shutoff difference> bar: electromagnet>Volt: 12.0 KSB/AFB Del. quantity cm3/: 26...38 VH-VL valve Volt: -1000s.: LFG/ERHOHTER LL Shutoff electromagnet>Volt: 12.0 Shutoff electromagnet: Part-load del.at 3rd inj.-qty. Cut-in terza fermo della portata >min voltage : 10.0 stop (EGR set) Rated voltage : 12.0 scarico) (ARF) gaz d'échappement-ARF) Mounting and assembly dimensions: Spacing mm: 12.0 Designation 1/min: 1250 1st speed mm: 3.2...3.4 KF Charge press. hPa: ARF1 mm: KOT KSB/AFB MS mm: 1.6...1.9 > Volt: mm: 29.4...33.4 valve Ya Shutoff Yb mm: 63.5...72.5 electromagnet>Volt: 12.0 Del. quantity cm3/: 19.5...20.5 Ajustement Potentiometer: 1000s.: (27.5...22.5) 1/min: 600 2nd speed Angle for Charge press. hPa: ARF2 °: 25.0 pot. KSB/AFB Supply voltage > Volt: valve pot. > volt: 5.0 Shutoff electromagnet>Volt: 12.0 Remarks: Del. quantity cm3/: 9.5...10.5 : ARF1= 3.55 VOLT 1000s.: (7.5...12.5) : ARF2 = 1.85 VOLT Ya = Distance between VE flange and Automatic starting fuel delivery: speed-control lever in idle position 1/min: 500 1st speed Measurement point = edge of control KSB/AFB Lever on drive end Volt: valve Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 24.00...36.00 Yb = Distance between VE flange and speed-control lever in rated speed 1000s.: LFG/LL VH-VL position Measurement point = edge of control 1/min: 200 lever on distributor-head end 2nd speed KSB/AFB valve Volt: -Shutoff electromagnet>Volt: 12.0

Del. quantity cm3/: 50.0...70.0

Shutoff BOSCH-INJ.-PUMP TEST SPECIFICATIONS electromagnet>Volt: 12 Note inst. in remarks column Supply-pump pressure Test scheet : VW 1/min: 1250 Speed Edition : 09.08.95 Setting value bar: 5.40...6.00 replaces Shutoff Calibrating oil : ISO-4113 electromagnet>Volt: 12 Injection pump : VE4/8F2200R574-1 Full-load del. w/out charge press.: Type number : 0 460 484 101 Customer Part-No. : 1/min: 1250 Speed Del. quantity cm3/ 1000s.: 33.0...34.0 > Customer-specific information Shutoff Customer electromagnet>Volt: 12.0 cm3/: 2.0 Dispersion : 1.9 L SD Engine 1000s.: (3.0) TEST BENCH REQUIREMENTS Residual-Delivery Setting Overflow restricti: 1 463 456 303 1/min: 520 Speed Del. quantity cm3/ Calibrating-oil 1000s.: 6.00...8.00 return>temp. > °C Shutoff with>thermometer> : 40.00...48.00 electromagnet Volt: 12 Electronically> : 42.00...50.00 Full-load speed regulation Inlet press., bar: 0.30...0.40 1/min: 2525 Speed Calibrating nozzle-holder Del. quantity cm3/ : 1 688 901 111 1000s.: 8.50...12.50 assembly> Shutoff electromagnet>Volt: 12 Opening bar: 147.00...150.00 Pressure> Start: Test inj. tubing : 1 680 750 073 1/min: 100 Speed Del. quantity cm3/: 40.00...66.00 Outside diameter : 6.00 mind> 1000s.: 40.00 x Wall>thickness : 2.00 Shutoff x Length> mm: 450 electromagnet>Volt: 12 Start of delivery Inspection-pump test specifications Prestroke Test specifications in parentheses mm: -(from BDC): -Timing-device characteristic: Start of delivery block Piston stroke mm: 0.9 1st speed 1/min: 750 mm: +-0.02(0.06)mm: 3.10...3.90 TD travel Outlet > mm: (2.80...4.20) electromagnet>Volt: 12.0 Injection-pump setting values 1/min: 1250 2nd speed mm: 5.10...5.50 Test specifications in parentheses TD travel mm: (4.60...6.00) Timing-device travel Shutoff electromagnet>Volt: 12 3rd speed 1/min: 2000 1/min: 1250 Setting value mm: 5.10...5.50 TD travel mm: 7.5...8.3

mm: (7.2...8.6) electromagnet>Volt: 12.0 Del. quantity cm3/: 33.0...34.0 > 1000s.: (31.3...35.7) 7th speed 1/min: 750 Shutoff electromagnet>Volt: 12 7th speed Supply-pump pressure characteristic: Shutoff electromagnet>Volt: 12.0 1/min: 750 Del. quantity cm3/: 32.5...35.5 1st speed Supply-pump 1000s.: (31.0...37.0) bar: 4.00...4.60 8th speed pressure> 1/min: 400 Shutoff Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 34.5...40.5 > 1000s.: (32.0...43.0) electromagnet>Volt: 12 1/min: 1250 2nd speed Supply-pump pressure> bar: 5.40...6.00 Shutoff electromagnet>Volt: 12 1/min: 2000 Electr. shutoff: 3rd speed Supply-pump bar: 7.30...7.90 pressure> 1st speed 1/min: 450 Shutoff Del. quantity cm3/: 0.00...3.00 electromagnet>Volt: 12 1000s.: (0.00...3.00) Shutoff Overlow quantity at overflow valve: electromagnet>volt: -1/min: 750 1st speed Damper set qty.: Shutoff electromagnet>Volt: 12 LFG-setting: : 41.70...83.40 Overflow cm3/10s: (27.80...97.30) quantity> Idle delivery: 1/min: 2200 2nd speed Shutoff 1st speed 1/min: 450 electromagnet>Volt: 12 Shutoff : 55.60...152.90 Overflow electromagnet Volt: 12 quantity> cm3/10s: (41.70...152.90) Del. quantity cm3/: 8.50...10.5 1000s.: (5.50...13.50) Delivery-quant. and breakaway char.: High Idle: 1/min: 2675 1/mi: 525 2nd speed 1st speed Shutoff Shutoff electromagnet Volt: 12 electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 Del. quantity cm3/: 8.50...10.50 1000s.: (5.50...13.50) 1000s.: (0.00...3.00) 3rd speed 1/min: 2525 Shutoff Rest delivery: electromagnet>Volt: 12.0 Del. quantity cm3/: 8.50...12.5 1/min: 525 1st speed 1000s.: (6.50...14.5) Shutoff 1/min: 2400 4th speed electromagnet>Volt: 12 Del. quantity cm3/: 6.00...8.00 Shutoff electromagnet>Volt: 12.0 1000s.: (3.0...11.0) Del. quantity cm3/: 22.0...32.0 1000s.: (21.0...33.0) Automatic starting fuel delivery: 1/min: 2200 5th speed Shutoff 1st speed 1/min: 180 electromagnet>Volt: 12 Del. quantity cm3/: 34.0...35.00 > 10005.: (31.8...37.20) Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 40.00...74.00 1/min: 1250 1000s.: (40.00...74.00) 6th speed

Shutoff

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 40.00...66.00 > 1000s.: (40.00...66.00)

## Shutoff electromagnet:

Cut-in

>min voltage : 10.0 Rated voltage : 12.0

## Mounting and assembly dimensions:

## Designation

K mm: 3.2...3.4 KF mm: 5.7 MS mm: 1.1...1.5 Ya mm: 36.0...40.0 Yb mm: 47.7...57.3

## Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and Speed-control lever in rated speed position
Measurement point = edge of control lever on distributor—head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VW Edition : 08.08.95 replaces Calibrating oil : ISO-4113 Injection pump : VE5/8F2100L545-2 Type number : 0 460 485 029 Customer Part-No. : Customer-specific information Customer : VW Engine : 2.4 L SDT4/SG TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 000 assembly> Opening | Pressure> bar: 147.00...150.00 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1250 Speed Setting value bar: 5.70...6.30 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Speed Del. quantity cm3/ 1000s.: 36.0...37.0 Shutoff electromagnet>Volt: 12.0 cm3/: 2.0 Dispersion 1000s.: (3.0) Residual-Delivery Setting Speed 1/min: 540 Del. quantity cm3/ 1000s.: 6.50...7.50 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2400 Speed Del. quantity cm3/ 1000s.: 10.J...14.00 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed Del. quantity cm3/: 35.00...85.00 1000s.: 35.00 mind> Shutoff electromagnet>Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: Speed 1/min: 1500 Inj.-qty. cm3/ difference> 1000S.: -3.50...9.50 \* electromagnet>Volt: 12 TD-travel dif.measurement 1.Speed 1/min: 1500 TD-travel mm: -0.3...0.5 \*difference> Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

Supply-pump pressure

electromagnet>Volt: 12

1/min: 1250

Setting value mm: 2.20...2.60

Shutoff

2nd speed 1/min: TD travel mm:	1790 - 5.005.80 -	electromagnet>Volt: 12
	(4.706.10)	<pre>Del. quantity cm3/: 10.0014.00</pre>
Shutoff	-	8th speed 1/min: 2300
electromagnet>Volt:	12 -	Shutoff
3rd speed 1/min:	1250 -	electromagnet>Volt: 12
	2.202.60	Del. quantity cm3/: 17.0027.00
	(1.703.10)	-> 1000s.: (26.0028.00)
Shutoff		9th speed
electromagnet>Volt:	12	- Shutoff
4th speed 1/min:		electromagnet>Volt: 12
	0.701.50	Del. quantity cm3/: 30.0032.00
	(0.401.80)	> 1000s.: (28.8033.20)
Shutoff	12	12th speed 1/min: 1250
electromagnet>Volt:	12	Shutoff
Supply-pump pressur	o chanactoristic:	electromagnet>Volt: 12
anbbra bruib bressur	e characteristic:	bel. quantity cm3/: 36.0037.00 - > 1000s.: (34.338.7)
1st speed 1/min:	1000	20th speed 1/min: 600
Supply-pump	1000	- Shutoff
	5.05.6	- electromagnet>Volt: 12
> bar:		Del. quantity cm3/: 32.3035.30
Shutoff Shutoff	]	- > 1000s.: (30.8036.80)
electromagnet>Volt:	12.0	L 10000: (30:00:::30:00)
2nd speed 1/min:		-
Supply-pump	. 62 (	-
	5.706.30	- Electr. shutoff:
> bar:	1	-
Shutoff	· _	- 1st speed 1/min: 415
electromagnet>Volt:	12	- Del. quantity cm3/: 0.003.00
3rd speed 1/min:	1790	- > 1000s.: (0.003.00)
Supply-pump	4	- Shutoff
	7.207.80	- electromagnet>volt: -
> bar:	- 4	-
Shutoff	+	- Damper set qty.:
electromagnet>Volt:	12	<del>-</del>
	+	- LFG-setting:
Overlow quantity at	overflow valve:	-
	+	- Idle delivery:
1st speed 1/min:	600 +	-
Shutoff	+	- 1st speed 1/min: 415
electromagnet>Volt:		- Shutoff
	41.7083.40	electromagnet Volt: 12
quantity> cm3/10s:		- Del. quantity cm3/: 7.009.00
2nd speed 1/min:	2100 +	> 1000s.: (4.0012.00)
Shutoff	+	• •
electromagnet>Volt:		Rest delivery:
	55.60152.90	
quantity> cm3/10s:	(40.00167.90)	- 1st speed 1/min: 540
<b>5</b> -1 *	t	Shutoff
Delivery-quant. and	breakaway char.:	electromagnet>Volt: 12
	†	Del. quantity cm3/: 6.507.50
Ond anacal 1/min.	2400	> 1000s.: (5.009.00)
2nd speed 1/min:	2000	2nd speed 1/min: 490
Shutoff	12	Shutoff
electromagnet Volt:		electromagnet Volt: 12
Del. quantity cm3/: > 1000s.:	(0.006.00)	Del. quantity cm3/: 6.808.80 > 1000s.: (5.3010.30)
5th speed 1/min:		
Shutoff	I	load-dependent start of delivery:

<pre>Injqty.dif.measurement:</pre>
1st speed 1/min: 1500 Injqty. cm3/ : -6.08.0 " difference> 1000s.: - Shutoff
electromagnet>Volt: 12.0 2nd speed
Injqty. cm3/: 0.03.0 Z' Shutoff
electromagnet Volt: 12.0
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed
TD-travel : -1.21.6 ' difference> mm: -
Shutoff electromagnet>Volt: 12
SP press.—dif.measurement:
pompa di mandata (FP): 1st speed
Supply pump-
Supply pump- pressure > : -0.10.3 " difference> bar: - Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1500 Supply pump-
pressure > : -0.81.2 '
difference> bar: - Shutoff
electromagnet>Volt: 12.0
Automatic starting fuel delivery:
1st speed 1/min: 180 Shutoff
electromagnet>Volt: 12 Del. quantity cm3/: 35.0085.00
> 1000s.: -
2nd speed 1/min: 380 Shutoff
electromagnet>Volt: 12 Del. quantity cm3/: 17.0037.00
> 1000s.: (17.0037.00)
4th speed 1/min: 100 Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.0085.00 > 1000s.: -
Shutoff electromagnet:
Cut-in

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4 KF mm: 5.8 MS mm: 1.2...1.6 Ya mm: 32.8...34.8 Yb mm: 60.5...71.5

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

>min voltage : 10.0 Rated voltage : 12.0 BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : VMA
Edition : 09.04.92
replaces : 01.85
Calibrating oil : ISO 4113

Injection pump : VE4/9F2150L31-1 Type number : 0 460 494 133

Customer—specific information Customer : MOTORI VM

Engine : HR 488 HT

TEST BENCH REQUIREMENTS

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.35

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 688 901 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1900 Charge press. hPa: 800

Setting value mm: 6,40...6,80

Shutoff

electromagnet>Volt: 12.0

Supply-pump pressure

Speed 1/min: 1900 Charge press hPa: 800 Setting value bar: 5.70...6.30

Shutoff

electromagnet>Volt: 12.0

Full-load del. with charge press.:

Speed 1/min: 1600 Charge press. hPa: 800

Del. quantity cm3/

> 1000s.: 46.50...47.50

Shutoff

electromagnet>Volt: 12.0 Dispersion cm3/: 3,0 > 1000s.: -

Full-load del. w/out charge press.:

Speed 1/min: 600 Del. quantity cm3/

> 1000s.: 31.50...32.50

Shutoff

electromagnet>Volt: 12.0

Low-idle speed regulation

Speed 1/min: 400 Charge press hPa: -Del. quantity cm3/

> 1000s.: 8.00...12.00

Shutoff

electromagnet>Volt: 12.0 Del. quantity cm3/: 3.0 > 1000s.: -

Full-load speed regulation

Speed 1/min: 2300 Charge press hPa: 800

Del. quantity cm3/

> 1000s.: 27.50...33.50

Shutoff

electromagnet>Volt: 12.0

Start:

Speed 1/min: 100 Charge press hPa: -Del. quantity cm3/: mind> 1000s.: 44.0

Shutoff

electromagnet>Volt: 12.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000 Charge press hPa: 800

TD travel mm: 1.30...2.10

> mm: (1.002.40)	+ Del. quantity cm3/: 39.3041.30
electromagnet>Volt: 12.0	+ > 1000s.: (37.6042.00)
2nd speed 1/min: 1900	+ 2nd speed 1/min: 2600
Charge press hPa: 800	+ Charge press. hPa: 800
TD travel mm: 6.406,80	+ Shutoff
> mm: (5.907.30)	+ electromagnet Volt: 12.0
Shutoff	+ Del. quantity cm3/: 0.02.0
electromagnet>Volt: 12.0	+ > 1000s.: -
3rd speed 1/min: 2150	+ 3rd speed 1/min: 2450
Charge press hPa: 800 TD travel mm: 7.508.30	+ Charge press. hPa: 800
TD travel mm: 7.508.30 mm: (7.208.60)	+ Shutoff
Shutoff	+ electromagnet>Volt: 12.0
electromagnet>Volt: 12.0	+ Del. quantity cm3/: 0.010.0 + > 1000s.: -
etettrollaghet/vott: 12.0	
Supply-pump pressure characteristic:	+ 4th speed 1/min: 2300 + Charge press. hPa: 800
supply pully pressure characteristic.	+ Shutoff
1st speed 1/min: 400	+ electromagnet>Volt: 12.0
Charge press. hPa: 800	+ Del. quantity cm3/: 27.5033.50
Supply-pump	+ > 1000s.: (26.5034.50)
pressure> bar: 2.002.60	+ 5th speed 1/min: 2150
Shutoff	+ Charge press. hPa: 800
electromagnet>Volt: 12.0	+ Shutoff
2nd speed 1/min: 1900	+ electromagnet>Volt: 12.0
Charge press. hPa: 800	Del. quantity cm3/: 40.0043.00
	+ > 1000s.: (39.243.80)
Supply-pump pressure> bar: 5.706.30	,
Shutoff	· · · · · · · · · · · · · · · · · · ·
	+ Charge press. hPa: 800 + Shutoff
electromagnet>Volt: 12.0 3rd speed  1/min: 2150	
	+ electromagnet>Volt: 12.0
— · · · · · · · · · · · · · · · · · · ·	Del. quantity cm3/: 46.5047.50
Supply-pump pressure> bar: 6.306.90	+ > 1000s.: (44.7049.30) + 7th speed 1/min: 600
pressure> bar: 6.306.90 Shutoff	
electromagnet>Volt: 12.0	+ Charge press. hPa: 270 + Shutoff
etectromagnet/vott. 12.0	+ electromagnet>Volt: 12.0
Overlow quantity at overflow valve:	+ Del. quantity cm3/: 39.3041.30
over tow quantity at over itow vatve.	1000s.: (37.6042.00)
1st speed 1/min: 600	+ 8th speed 1/min: 600
	, , , , , , , , , , , , , , , , , , ,
Charge press. hPa: - Shutoff	+ Charge press. hPa: - + Shutoff
electromagnet>Volt: 12.0	electromagnet>Volt: 12.0
Overflow : 42.0083.00	Del. quantity cm3/: 31.5032.50
quantity> cm3/10s: (27.0098.00)	+ > 1000s.: (29.8034.20
2nd speed 1/min: 2150	10000: (27:00:::54:20
Charge press. hPa: 800	1
Shutoff	<u> </u>
electromagnet>Volt: 12.0	Idle delivery:
Overflow : 55.00138.00	Tate delivery.
quantity> cm3/10s: (40.00153.00)	1st speed 1/min: 400
quality ty	+ Shutoff
Delivery-quant. and breakaway char.:	+ electromagnet>Volt: 12.0
Control Administration of controlled aller	Del. quantity cm3/: 8.0012.0
	+ > 1000s.: (6.0014.00)
1nd speed 1/min: 600	+ Dispersion cm3/: 3.0
Charge-air pressure-setting	+ > 1000s.: -
point> hPa: 270	2nd speed 1/min: 500
LDA-stroke mm: 3.8	+ Shutoff
Shutoff	electromagnet>Volt: 12.0
electromagnet>Volt: 12.0	Del. quantity cm3/: 0.06.00
	1 TOST MEMORITY ORDER OF OTOTOLOGO

1000s.: -3rd speed 1/min: 800 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 0.0....2.0 1000s.: -Automatic starting fuel delivery: 1/min: 350 1st speed Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 44.00... > 1000s.: -1/min: 450 2nd speed Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 0.0...43.0 > 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.3 K KF mm: 5.7...5.9 mm: 0.7...0.9 MS mm: 5.6 SVS max. mm: 3.8 LDA stroke mm: 20.2...22.2 XK XL mm: 8.7...12.1 Remarks: : 0 (6.00...14.00) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VMA Edition : 06.95 : 04.92 replaces Calibrating oil : ISO 4113 Injection pump : VE4/9F2150L31-1 Type number : 0 460 494 133 Customer-specific information Customer : MOTORI VM : HR 488 HT Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar: 0.35 Calibrating nozzle-holder : 1 688 901 000 assembly> Opening bar: 147.00...150.00 Pressure> Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length> Start of delivery Prestroke mm: -(from BDC): -Injection pump setting values Test specifications in parentheses Timing-device travel 1/min: 1900 Charge press. hPa: 800 Setting value mm: 6,40...6,80 Shutoff electromagnet>Volt: 12.0 Supply-pump pressure

Charge press hPa: 800 Setting value bar: 5.70...6.30 Shutoff electromagnet>Volt: 12.0 Full-load del. with charge press.: 1/min: 1600 Speed Charge press. hPa: 800 Del. quantity cm3/ 1000s.: 46.50...47.50 Shutoff electromagnet>Volt: 12.0 cm3/: 3.0Dispersion 1000s.: -Full-load del. w/out charge press.: 1/min: 600 Speed Del. quantity cm3/ 1000s.: 31.50...32.50 Shutoff electromagnet>Volt: 12.0 Low-idle speed regulation 1/min: 400 Speed Charge press hPa: -Del. quantity cm3/ 1000s.: 8.00...12.00 > Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 3.0 1000s.: -Full-load speed regulation Speed 1/min: 2300 Charge press hPa: 800 Del. quantity cm3/ 1000s.: 27.50...33.50 Shutoff electromagnet>Volt: 12.0 Start: 1/min: 100 Speed Charge press hPa: -Del. quantity cm3/: mind> 1000s.: 44.0 Shutoff electromagnet>Volt: 12.0 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1st speed 1/min: 1000 Charge press hPa: 800

Speed

1/min: 1900

TD travel mm:	1.302.10	+	electromagnet>Volt	:: 12.0
> mm:	(1.002.40)	+	Del. quantity cm3/	
electromagnet>Volt:		1		: (37.6042.00)
		T		
2nd speed 1/min:		Ť		: 2600
	800	+	Charge press. hPa	: 800
TD travel mm:	6.406,80	+	Shutoff	
> mm:	(5.907.30)	+	electromagnet Volt	: 12.0
Shutoff		1	Del. quantity cm3/	
electromagnet>Voit:	12 0	1	> 1000s.	
		T		
3rd speed 1/min:		Ť	3rd speed 1/mir	
Charge press hPa:		+	Charge press. hPa	: 800
	7.508.30	+	Shutoff	
> mm:	(7.208.60)	+	electromagnet>Volt	: 12.0
Shutoff		1	Del. quantity cm3/	: 0.010.0
electromagnet>Volt:	12 0	1	> 1000s.	
eceeti ollagi let- vocc.	16.0	T		
S 1		T	4th speed 1/mir	
Supply-pump pressur	e characteristic:	+	Charge press. hPa	: 800
		+	Shutoff	
1st speed 1/min:	400	+	electromagnet>Volt	: 12.0
Charge press. hPa:		+	Del. quantity cm3/	
Supply-pump		1		: (26.5034.50)
	2.002.60	T		
· · · · · · · · · · · · · · · · · · ·	2.002.00	Ť		: 2150
Shutoff		+	Charge press. hPa	: 800
electromagnet>Volt:		+	Shutoff	
2nd speed 1/min:	1900	+	electromagnet>Volt	: 12.0
Charge press. hPa:	800	1	Del. quantity cm3/	
Supply-pump		L		: (39 243.80)
	5.706.30	Ţ		
•	3.706.30	Ť	6th speed 1/min	
Shutoff		+	Charge press. hPa	: 800
electromagnet>Volt:		+	Shutoff	
3rd speed 1/min:	2150	+	electromagnet>Volt	: 12.0
Charge press. hPa:		1	Del. quantity cm3/	
Supply-pump		Ţ		: (44.7049.30)
	6.306.90	1		
	0.300.90	T	7th speed 1/min	
Shutoff		†	Charge press. hPa	: 270
electromagnet>Volt:	12.0	+	Shutoff	
		+	electromagnet>Volt	: 12.0
Overlow quantity at	overflow valve:	+	Del. quantity cm3/	: 39.3041.30
4		1	> 1000s.	(37.6042.00)
1st speed 1/min:	400	1	8th speed 1/min	
		Τ.		
Charge press. hPa:	-	† `	Charge press. hPa	<del>-</del>
Shutoff		+	Shutoff	
electromagnet>Volt:	12.0	+	electromagnet>Volt	: 12.0
Overflow :	42.0083.00	+	Del. quantity cm3/	: 31.5032.50
quantity> cm3/10s:	(27.0098.00)	1		: (29.8034.20
2nd speed 1/min:		1	, 33300	
		7		
Charge press. hPa:	000	T		
Shutoff		†		
electromagnet>Volt:	12.0	+	Idle delivery:	
Overflow :	<i>55</i> .00138.00	+		
quantity> cm3/10s:	(40.00153.00)	1	1st speed 1/min	: 400
		1	Shutoff	
Dolayant and	hnookayay chan .	1	electromagnet>Volt	12.0
Delivery-quant. and	Dicaraway Chai	T		
		†	Del. quantity cm3/	
		+		(6.0014.00)
1nd speed 1/min:	600	+		3.0
Charge-air pressure-	setting	+	> 1000s.	: <del>-</del>
point> hPa:		1	2nd speed 1/min	
LDA-stroke mm:		1	Shutoff	. 500
	3.0	T		. 12 0
Shutoff		+	electromagnet>Volt	14.0

```
Del. quantity cm3/: 0.0...6.00
             1000s.: -
3rd speed
             1/min: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.0....2.0
            1000s.: -
Automatic starting fuel delivery:
1st speed
             1/min: 350
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 44.00...
            1000s.: -
2nd speed
             1/min: 450
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.0...43.0
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                  : 12.0
Mounting and assembly dimensions:
Designation
                mm: 3.3
K
KF
                mm: 5.7...5.9
                mm: 0.7...0.9
MS
                mm: 5.6
SVS max.
LDA stroke
                mm: 3.8
                mm: 20.2...22.2
XK
XL
                mm: 8.7...12.1
Remarks:
                  : 0 (6.00...14.00) 3.
```

Shutoff BOSCH-INJ.-PUMP TEST SPECIFICATIONS electromagnet>Volt: 12 Note inst. in remarks column Supply-pump pressure 1/min: 1250 Test scheet : PEU Speed Edition : 04.08.95 Charge press hPa: 1000 replaces Setting value bar: 5.30...5.90 Calibrating oil : ISO-4113 Shutoff electromagnet>Volt: 12 Injection pump : VE4/9F2250R513 : 0 460 494 341 Type number Full-load del. with charge press.: Customer Part-No. : 1/min: 1250 Charge press. hPa: 1000 Customer-specific information Del. quantity cm3/ Customer : PSA 1000s.: 53.50...54.50 Shutoff Engine : XUD 9 TF-Y electromagnet>Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0) TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Full-load del. w/out charge press.: 1/min: 500 Calibrating oil Speed return>temp. > °C Del. quantity cm3/ with>thermometer> : 40.00...48.00 1000s.: 36.50...37.50 Electronically> : 42.00...50.00 Shutoff electromagnet>Volt: 12 Inlet press., bar: 0.30...0.40 Residual-Delivery Setting Calibrating nozzle-holder : 1 688 901 022 1/min: 490 assembly> Speed Del. quantity cm3/ 1000s.: 8.00...9.00 Opening | bar: 130.00...133.00 Shutoff Pressure> electromagnet Volt: 12 Test inj. tubing : 1 680 750 073 Full-load speed regulation Outside diameter : 6.00 1/min: 2575 Speed x Wall>thickness : 2.00 Charge press hPa: 1000 mm: 450 Del. quantity cm3/ x Length> 1000s.: 12.00...16.00 Shutoff Start of delivery electromagnet>Volt: 12 Prestroke (from BDC): -Start: Indicator setting Piston stroke> mm: 0.3 1/min: 150 Outlet> : A Del. quantity cm3/: 37.00...67.00 mind> 1000s.: 37.00 Injection-pump setting values Shutoff Test specifications in parentheses electromagnet>Volt: 12 Timing-device travel Load-dependent start of delivery: Inj.-qty.dif.measurement: Speed 1/min: 1250 Charge press. hPa: 1000 Speed 1/min: 1250 mm: 3.40...3.80 Inj.-qty. cm3/Setting value

difference> 1000s.: -11.0...15.0 \* Shutoff 1st speed 1/min: 500 electromagnet>Volt: 12 Charge press. hPa: 1000 TD-travel dif.measurement Shutoff electromagnet>Volt: 12 1.Speed 1/min: 1250 Overflow : 41.70...86.10 TD-travel quantity> cm3/10s: (26.70...101.10) difference> mm: -0.9...1.1 \*1/min: 2150 2nd speed Shutoff Charge press. hPa: 1000 electromagnet>Volt: 12 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications : 55.60...139.00 Overflow Test specifications in parentheses quantity> cm3/10s: (40.60...154.00) Timing-device characteristic: Delivery-quant. and breakaway char.: 2nd speed 1/min: 2000 hPa: 1000 Charge press 1/min: 750 1nd speed mm: 6.10...6.90 TD travel Charge-air pressure-setting mm: (5.80...7.20) hPa: 350 >tnioq Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 1/min: 1250 Del. quantity cm3/: 45.50...46.50 3rd speed hPa: 1000 1000s.: (43.00...49.00) Charge press > TD travel mm: 3.40...3.80 2nd speed 1/min: 2750 mm: (2.90...4.30) Charge press. hPa: 1000 Shutoff Shutoff electromagnet>Volt: 12 electromagnet Volt: 12 4th speed 1/min: 750 Del. quantity cm3/: 0.00...6.00 hPa: 1000 Charge press 1000s.: (0.00...6.00) TD travel mm: 1.10...1.90 5th speed 1/min: 2575 > mm: (0.80...2.20) Charge press. hPa: 1000 Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 Del. quantity cm3/: 12.00...16.00 Supply-pump pressure characteristic: 1000s.: (10.00...18.00) 8th speed 1/min: 2375 1/min: 750 1st speed Charge press. hPa: 1000 Charge press. hPa: 1000 Shutoff Supply-pump electromagnet>Volt: 12 Del. quantity cm3/: 34.00...44.00 pressure> bar: 4.00...4.60 1000s.: (33.00...45.00) bar: -1/min: 2150 Shutoff 9th speed electromagnet>Volt: 12 Charge press. hPa: 1000 1/min: 1250 2nd speed Shutoff Charge press. hPa: 1000 electromagnet>Volt: 12 Del. quantity cm3/: 49.10...51.10 Supply-pump bar: 5.30...5.90 1000s.: (47.90...52.30) pressure> 10th speed > bar: -1/min: 2000 Shutoff Charge press. hPa: 1000 electromagnet>Volt: 12 Shutoff 1/min: 2000 3rd speed electromagnet>Volt: 12 Del. quantity cm3/: 51.00...53.00 Charge press. hPa: 1000 1000s.: (49.80...54.20) Supply-pump bar: 7.20...7.80 pressure> 1/min: 1250 12th speed bar: -Charge press. hPa: 1000 > Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 Del. quantity cm3/: 53.50...54.50 1000s.: (51.8...56.2) Overlow quantity at overflow valve:

18th speed 1/min: 500 TD-travel dif.measurement: Charge press. hPa: correttore anticipo iniezione (SV): Shutoff 1/min: 1250 1st speed electromagnet>Volt: 12 TD-travel : -1.40...3.0 " Del. quantity cm3/: 36.50...37.50 > 1000s.: (34.00...40.00) difference> Shutoff 20th speed 1/min: 500 electromagnet>Volt: 12 Charge press. hPa: 1000 Shutoff SP press.-dif.measurement: electromagnet>Volt: 12 pompa di mandata (FP): Del. quantity cm3/: 46.80...49.80 1st speed 1/min: 1250 1000s.: (45.30...51.30) Supply pump-: -0.1...0.3 " pressure > difference> bar: -Shutoff Electr. shutoff: electromagnet>Volt: 12 1st speed 1/min: 440 Automatic starting fuel delivery: Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1/min: 380 Shutoff 2nd speed electromagnet>volt: -Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 25.00...45.00 Damper set qty.: 1000s.: (25.00...45.00) LFG-setting: 1/min: 200 3rd speed Shutoff Idle delivery: electromagnet>Volt: 12 Del. quantity cm3/: 50.00...56.00 1/min: 440 1st speed 1000s.: (45.50...60.50) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 15.00...17.00 1/min: 150 4th speed 1000s.: (12.00...20.00) Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 37.00...67.00 High Idle: 1000s.: (37.00...67.00) 1/mi: 490 1st speed Shutoff Shutoff electromagnet: electromagnet>Volt: 12 Del. quantity cm3/: 15.00...17.00 Cut-in 1000s.: (12.00...20.00) >min\_vow\_nge : 10.0 : 12.0 Rated voltage Rest delivery: Mounting and assembly dimensions: 1st speed 1/min: 490 Shutoff Designation mm: 3.2...3.4 electromagnet>Volt: 12 K Del. quantity cm3/: 8.00...9.00 KF mm: KOT 1000s.: (6.50...10.50) MS mm: 1.1...1.5 mm: 28.8...32.8 Ya Yb mm: 69.2...80.8 Load-dependent start of delivery: Inj.-qty.dif.measurement: Remarks: 1st speed 1/min: 1250 : Inj.-qty. cm3/ : 2.0...11.0 Z" difference> 1000S.: -Ya = Distance between VE flange and Shutoff speed-control lever in idle electromagnet>Volt: 12 position Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor—head end

Z = Absolute delivery

Note inst. in remarks column

Test scheet : REN

Edition : 08.08.95

replaces

: ISO-4113 Calibrating oil

: VE4/9F2050R452-2 Injection pump

Type number : 0 460 494 351

Customer Part-No. :

Customer-specific information

Customer : RENAULT

Engine : J8S-758

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly>

Opening |

bar: 130.00...133.00 Pressure>

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

mm: 450 x Length>

Start of delivery

Prestroke mm: -

(from BDC): -

Injection pump setting values

Test specifications in parentheses

Timing-device travel

1/min: 1125 Speed

Setting value mm: 2.60...3.00

Shutoff

electromagnet>Volt: 12.0

Supply-pump pressure

1/min: 1125 Speed

Setting value bar: 4.20...4.80

Shutoff

electromagnet>Volt: 12.0

Full-load del. w/out charge press.:

1/min: 1125 Speed

Del. quantity cm3/

1000s.: 35.2...36.2

Shutoff

electromagnet>Volt: 12.0 Dispersion cm3/: 2.51000s.: (3.0)

Residual-Delivery Setting

1/min: 500 Speed

Del. quantity cm3/

1000s.: 2.00...6.00

Shutoff

electromagnet Volt: 12.0

Full-load speed regulation

1/min: 2200 Speed

Del. quantity cm3/

> 1000s.: 17.J...23.00

Shutoff

electromagnet>Volt: 12.0

Start:

1/min: 100 Speed

Del. quantity cm3/: 52.00...92.00

1000s.: 52.00 mind>

Shutoff

electromagnet>Volt: 12.0

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1125 Speed

Inj.-qty. cm3/

difference> 1000S.: -11.0...15.0 \*

Shutoff

electromagnet>Volt: 12.0 TD-travel dif.measurement

1/min: 1125 1.Speed

TD-travel

difference> mm: -0.5...0.7 \*

Shutoff

electromagnet>Volt: 12.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min:		Del. quantity cm3/: 2.5010.5
	0.71.5	> 1000s.: (1.511.5)
electromagnet>Volt:	(0.41.8)	3rd speed 1/min: 2200 Shutoff
2nd speed 1/min:		electromagnet>Volt: 12.0
	2.63.0	Del. quantity cm3/: 17.023.0
	(2.13.5)	> 1000s.: (16.024.0)
Shutoff	+	4th speed 1/min: 2000
electromagnet>Volt:		Shutoff
3rd speed 1/min: TD travel mm:	7.107.90	electromagnet>Volt: 12.0
	(6.808.20)	Del. quantity cm3/: 33.835.8 > 1000s.: (32.537.1)
Shutoff	(0.000.20)	5th speed 1/min: 1750
electromagnet>Volt:	12.0	Shutoff
Cumply and man property		electromagnet>Volt: 12.0
Supply-pump pressure	e characteristic:	<pre>Del. quantity cm3/: 33.9035.90 &gt; 1000s.: (32.6037.20)</pre>
1st speed 1/min:	800	6th speed 1/min: 1125
Supply-pump	+	Shutoff
•	3.103.70	electromagnet>Volt: 12.0
> bar:	- +	Del. quantity cm3/: 35.236.2
Shutoff	12.0	> 1000s.: (33.438.0)
electromagnet>Volt: 2nd speed 1/min:		7th speed 1/min: 800 Shutoff
Supply-pump	I	electromagnet>Volt: 12.0
	4.204.80	Del. quantity cm3/: 32.735.7
> bar:	1	> 1000s.: (32 236.5)
Shutoff	+	
electromagnet>Volt:		
3rd speed 1/min:	2000	minaka abakatta
Supply-pump pressure> bar:	6.307.10	Electr. shutoff:
> bar:		1st speed 1/min: 400
Shutoff	1	Del. quantity cm3/: 0.003.00
electromagnet>Volt:	12.0	> 1000s.: -
	- · · · · · · · · · · · · · · · · · · ·	Shutoff
Overlow quantity at	overflow valve:	electromagnet>volt: -
1st speed 1/min: Shutoff	800	Damper set qty.:
electromagnet>Volt:	12.0	LFG-setting:
Overflow :	41.0083.30	
quantity> cm3/10s:		Idle delivery:
2nd speed 1/min: Shutoff	2200 +	1st speed 1/min: 400
electromagnet>Volt:	12.0 I	Shutoff
	55.30138.70	electromagnet Volt: 12.0
quantity> cm3/10s:		Del. quantity cm3/: 6.0010.00
National and the same	handan dan d	> 1000s.: (4.0012.00)
Delivery-quant. and	breakaway char.:	High Idle:
	I	rigii idle.
1nd speed 1/min:	2450	1st speed 1/mi: 500
Shutoff	+	Shutoff
electromagnet>Volt:		electromagnet>Volt: 12.0
Del. quantity cm3/: > 1000s.:		Del. quantity cm3/: 8.512.5 > 1000s.: (6.514.5)
2nd speed 1/min:		
Shutoff	<u> </u>	Rest delivery:
electromagnet Volt:	12.0	

1st speed 1/min: 500	- 2nd speed 1/min: 210 - Shutoff
electromagnet>Volt: 12.0	- electromagnet>Volt: 12.0
Del. quantity cm3/: 2.006.00	- Del. quantity cm3/: 45.0085.00
> 1000s.: -	- > 1000s.: -
Load-dependent start of delivery:	- 3rd speed 1/min: 100
<pre>Injqty.dif.measurement:</pre>	- Shutoff
+	- electromagnet>Volt: 12.0
1st speed	- Del. quantity cm3/: 52.092.0
Charge press. hPa: -	- > 1000s.: -
Injqty. cm3/ : -10.012.0 "	
difference> 1000S.: -	- Shutoff electromagnet:
Shutoff +	·
electromagnet>Volt: 12.0	· Cut-in
2nd speed	- >min voltage : 10.0
Charge press. hPa: -	- Rated voltage : 12.0
Injqty. cm3/: 2.08.0 Z'	•
difference> 1000s.: -	<ul> <li>Mounting and assembly dimensions:</li> </ul>
Shutoff	•
electromagnet Volt: 12.0	Designation
TD-travel dif.measurement:	- K mm: 3.23.4 - KF mm: 5.35.7
	- KF mm: 5.35.7 - MS mm: 1.11.3
correttore anticipo iniezione (SV):	· Ya mm: 37.841.8
TD-travel : - 1.01.6 '	· Yb mm: 41.952.1
difference mm: -	10 (9): 41.932.1
Shutoff +	Remarks:
electromagnet>Volt: 12.0	· Reliarks.
	•
SP pressdif.measurement:	Ya = Distance between VE flange and
pompa di mandata (FP):	speed-control lever in idle
1st speed 1/min: 1125	position
Supply pump-	Measurement point = edge of control
pressure > : - 0.10.3 "	lever on drive end
difference> bar: -	
Shutoff	
electromagnet>Volt: 12.0	Yb = Distance between VE flange and
+	speed-control lever in rated speed
Part-load del.at 3rd injqty.	position
terza fermo della portata	Measurement point = edge of control
stop (EGR set)	lever on distributor-head end
scarico) (ARF)	
gaz d'échappement-ARF) +	
Spacing mm: 12.0	
†	
1st speed 1/min: 1000 +	<pre>Z = Absolute delivery</pre>
Shutoff +	
electromagnet>Volt: 12.0 +	On initial measurement, screw in
Del. quantity cm3/: 23.524.5	residual-quantity adjusting screw 1 mm.
> 1000s.: (21.526.5) +	
Automatic starting fuel delivery:	Screw out residual-quantity adjusting screw 1 mm after setting pump.
1at aread 1/min: 710	
1st speed 1/min: 310 + Shutoff +	
electromagnet>Volt: 12.0 +	
Del. quantity cm3/: 25.0045.00	
> 1000s.: -	

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : NIS : 04.08.95 Edition replaces Calibrating oil : ISO-4113 Injection pump : VE4/9F2250R577 Type number : 0 460 494 354 Customer Part-No. : Customer-specific information Customer : NISSAN-MISA Engine : GX-3 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Opening | Pressure> bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1200 Setting value mm: 3.00...3.40 Shutoff electromagnet>Volt: 12

Full-load del. w/out charge press.: 1/min: 2150 Speed Del. quantity cm3/ 1000s.: 44.00...45.00 Shutoff electromagnet>Volt: 12 cm3/: 2.5 Dispersion 1000s.: (3.5) Low-idle speed regulation Speed 1/min: 350 Del. quantity cm3/ 1000s.: 6.5...10.5 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 2.5 1000s.: (3.0) Full-load speed regulation Speed 1/min: 2500 Del. quantity cm3/ 1000s.: 12.00...18.00 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed Del. quantity cm3/: 45.00...75.00 1000s.: 45.00 mind> Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 2150 1st speed mm: 8.8...9.6 TD travel > mm: (8.5...9.9) electromagnet>Volt: 12.0 1/min: 1200 2nd speed mm: 3.00...3.40 TD travel > mm: (2.50...3.90) Shutoff electromagnet>Volt: 12 3rd speed 1/min: 900 mm: 0.80...1.60 TD travel mm: (0.50...1.90) Shutoff electromagnet>Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 2150

Speed

Shutoff

Supply-pump pressure

electromagnet>Volt: 12

1/min: 1200

Setting value bar: 5.60...6.20

Supply-pump		+	Shutoff		
pressure> bar:	8.208.80	+	electromagnet	>Volt:	12.0
> bar:	-	+	Del. quantity	cm3/:	41.344.3
Shutoff		+	> 1	000s.:	(40.345.3)
electromagnet>Volt:	12	+		1/min:	
2nd speed 1/min:		+	Shutoff		
Supply-pump		1	electromagnet	>Volt:	12.0
pressure> bar:	5.606.20	1	Del. quantity		
> bar:		1			(39.544.5)
Shutoff		1		1/min:	
electromagnet>Volt:	12	1	Shutoff	17111111	000
3rd speed 1/min:		1	electromagnet	V/01+.	10
	700	T			
Supply-pump bar:	4.705.30	T	Del. quantity		
•		T	<i>'</i>	00000.:	(38.543.5)
· Suit	-	Ť			
Shutoff	40	†			
electromagnet>Volt:	12	†	<del>-</del> 1		
		+	Electr. shuto	ff:	
Overlow quantity at	overflow valve:	+			
		+	1st speed		
1st speed 1/min:	600	+	Del. quantity		
Shutoff		+		000s.:	(0.003.00)
electromagnet>Volt:	12	+	Shutoff		
Overflow :	41.7086.10	+	electromagnet:	>volt:	_
quantity> cm3/10s:	(26.70101.10)	+	J		
2nd speed 1/min:		+	Idle delivery	:	
Shutoff		1		•	
electromagnet>Volt:	12	1	1st speed	1/min:	350
	55.60139.00	1	Shutoff	,,,,,,,,,,,	330
quantity> cm3/10s:		1	electromagnet:	\\\alpha\ +•	12 0
quarterty clips 103.	(+0.00:1)4.00/	Ι	Del. quantity	cm3/·	4.5 10.50
Dolivery want and	brooksysy chan	T			(4.5012.5)
Delivery-quant. and	breakaway char.:	T			
		<b>T</b>		1/min:	000
A A /	2700	<b>T</b>	Shutoff		42.0
1nd speed 1/min:	2700	Ť	electromagnet		
Shutoff	4.4	†	Del. quantity		
electromagnet>Volt:		+		000s.:	
Del. quantity cm3/:		+		1/min:	500
> 1000s.:		+	Shutoff		
2nd speed 1/min:	2500	+	electromagnet?	>Volt:	12.0
Shutoff		+	Del. quantity	cm3/:	0.003.00
electromagnet Volt:	12	+	> 10	000s.:	_
Del. quantity cm3/:	12.018.0	+	4th speed 1	/min:	250
	(10.519.5)	+	Shutoff		
3rd speed 1/min:	2350	+	electromagnet	Volt:	12.0
Shutoff		<b></b>	Del. quantity		
electromagnet>Volt:	12.0	1			(25.035.0)
Del. quantity cm3/:	29.337.3	1			(25.01.105.0)
	(27.838.8)	1	High Idle:		
4th speed 1/min:		1	mga rate.		
Shutoff	2130	1	1st speed	1/mi:	500
	12 0	Ι	Shutoff	17101.	700
electromagnet>Volt:		T		Wal+-	12 N
Del. quantity cm3/:			electromagnet>		
	(43.245.8)		Del. quantity	いのの:	/.J(U.)
5th speed 1/min:	1800	Ť	> 10	1002.:	TLA 4.7 MM
Shutoff	•	†			
electromagnet>Volt:		†	Automatic star	ting f	uel delivery:
Del. quantity cm3/:		+			
	(41.6046.60)			/min:	270
6th speed 1/min:	1200	+	Shutoff		

```
electromagnet>Volt: 12.0
Del. quantity cm3/: 50.0...
             1000s.: -
             1/min: 400
 2nd speed
 Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 00.0...50.0
             1000s.: -
3rd speed
             1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 45.0...75.0
             1000s.: -
Shutoff electromagnet:
Cut-in
                  : 10.0
>min voltage
                  : 12.0
Rated voltage
Mounting and assembly dimensions:
Designation
                mm: 3.2...3.4
K
                mm: 5.2...5.6
KF
                mm: 1.1...1.3
MS
                mm: 4.7
TLA-A
                mm: KSB-HEBEL
XK
                mm: 4.3 MM
mm: 35.1...39.1
XL
Ya
                mm: 59.9...71.1
Ajustement Potentiometer:
Angle for
                 °: 25
pot.
Supply voltage
     >
              volt: 5.0
pot.
Output volt
             volt: 0.8
pot.
     >
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
Lever on drive end
Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end
```

Note inst. in remarks column

Test scheet : NIS

Edition : 04.08.95

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R577-1

: 0 460 494 355 Type number

Customer Part-No. :

Customer-specific information

Customer : NISSAN-MISA

Engine : GX-3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly>

Opening

bar: 130.00...133.00 Pressure>

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00

mm: 450 x Length>

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200

Setting value mm: 3.00...3.40

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1200 Speed

Setting value bar: 5.60...6.20

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

1/min: 2150 Speed

Del. quantity cm3/

1000s.: 44.00...45.00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.5)

Low-idle speed regulation

1/min: 350 Speed

Del. quantity cm3/

1000s.: 6.5...10.5

Shutoff

electromagnet>Volt: 12.0 Del. quantity cm3/: 2.5 1000s.: (3.0)

Full-load speed regulation

1/min: 2500 Speed

Del. quantity cm3/

1000s.: 12.00...18.00 >

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 45.00...75.00

mind> 1000s.: 45.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 2150 1st speed

mm: 8.8...9.6 TD travel

mm: (8.5...9.9)

electromagnet>Volt: 12.0

1/min: 1200 2nd speed

mm: 3.00...3.40 > mm: (2.50...3.90)

Shutoff

TD travel

electromagnet>Volt: 12 1/min: 900 3rd speed

mm: 0.80...1.60 TD travel

mm: (0.50...1.90)

Shutoff

electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2150

Supply-pump		+	Shutoff	
	8.208.80	1	electromagnet>Volt:	12.0
> bar:		1	Del. quantity cm3/:	
Shutoff		}		(40.345.3)
	40	T		
electromagnet>Volt:		+	7th speed 1/min:	900
2nd speed 1/min:	1200	+	Shutoff	
Supply-pump		+	electromagnet>Volt:	12.0
	5.606.20	1	Del. quantity cm3/:	
		1	10000	40.J4J.J
· Dui 1	<del>-</del>	Ť		(39.544.5)
Shutoff		+	8th speed 1/min:	600
electromagnet>Volt:	12	+	Shutoff	
3rd speed 1/min:		1	electromagnet>Volt:	12
•	700	1		
Supply-pump	/ 70	T	Del. quantity cm3/:	
	4.705.30	+	> 1000s.:	(38.543.5)
> bar:	-	+		
Shutoff		1		
	12	1		
electromagnet>Volt:	12	Ť		
		+	Electr. shutoff:	
Overlow quantity at	overflow valve:	+		
		1	1st speed 1/min:	350
1-4 1 1/	(00	3		
1st speed 1/min:	970	+	Del. quantity cm3/:	
Shutoff		+	> 1000s.:	(0.003.00)
electromagnet>Volt:	12	1	Shutoff	
	41.7086.10	<u> </u>	electromagnet>volt:	_
		T	etectrollagnet/vott.	
quantity> cm3/10s:		+		
2nd speed 1/min:	2150	+	Idle delivery:	
Shutoff		1	•	
	10	1	1st speed 1/min:	ZEÒ
electromagnet>Volt:		Ť	•	330
	55.60139.00	+	Shutoff	
quantity> cm3/10s:	(40.60154.00)	+	electromagnet>Volt:	12.0
4		1	Del. quantity cm3/:	
Daldyamy minute and	handen a shan a	Ţ		
Delivery-quant. and	preakaway cnar.:	+		(4.5012.5)
		+	2nd speed 1/min:	800
		1	Shutoff	
1nd speed 1/min:	2700	1	electromagnet>Volt:	12 0
	2,00	T		
Shutoff		†	Del. quantity cm3/:	
electromagnet>Volt:	12	+	> 1000s.:	-
Del. quantity cm3/:	0.05.0	+	3rd speed 1/min:	500
> 1000s.:		1	Shutoff	
		T		40.0
2nd speed 1/min:	2500	+	electromagnet>Volt:	12.0
Shutoff		+	Del. quantity cm3/:	0.003.00
electromagnet Volt:	12	1	> 1000s.:	
Del. quantity cm3/:		j	4th speed 1/min:	
vet. quarterty chist.	(40 5 40 5)	T		230
	(10.519.5)	+	Shutoff	
3rd speed 1/min:	2350	+	electromagnet Volt:	12.0
Shutoff		1	Del. quantity cm3/:	27.033.0
electromagnet>Volt:	12 A	1.		(25.035.0)
		T	/ 10003	(23.033.0)
Del. quantity cm3/:		+		
> 1000s.:	(27.838.8)	+	High Idle:	
4th speed 1/min:		1		
	2130	1	int annual 1/min	500
Shutoff		T	1st speed 1/mi:	טטכ
electromagnet>Volt:	12.0	+	Shutoff	
Del. quantity cm3/:	44.045.0	+	electromagnet>Volt:	12.0
	(43.245.8)	7	Del. quantity cm3/:	
		<u> </u>		
5th speed 1/min:	LOUU	†	> 1000s.:	TLA 4.7 MM
Shutoff		+		
electromagnet>Volt:	12	+	Automatic starting f	uel deliverv:
Del. quantity cm3/:		1	The second of th	
		T	1mh mand 1/	270
	(41.6046.60)	†	1st speed 1/min:	<b>21</b> 0
6th speed 1/min:	1200	+	Shutoff	

```
electromagnet>Volt: 12.0
 Del. quantity cm3/: 50.0...
             1000s.: -
              1/min: 400
 2nd speed
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 00.0...50.0
             1000s.: -
             1/min: 100
3rd speed
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 45.0...75.0
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                 : 12.0
Mounting and assembly dimensions:
Designation
                mm: 3.2...3.4
                mm: 5.2...5.6
KF
                mm: 1.1...1.3
MS
                mm: 4.7
TLA-A
                mm: KSB-HEBEL
XK
XL
                mm: 4.3 MM
                mm: 35.1...39.1
Ya
                mm: 59.9...71.1
Ajustement Potentiometer:
Angle for >
                 °: 25
Supply voltage
pot.
     >
              volt: 5.0
Output volt
pot. >
              volt: 0.8
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end
Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end
```

Note inst. in remarks column

Test scheet : VW

Edition : 04.08.95

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/9F2100R471-1 Type number : 0 460 494 356

Customer Part-No. :

Customer—specific information Customer : VW 1.9 L

Engine : UD T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 111

Opening |

Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 3.70...4.10

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.30...5.90

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

> 1000s.: 39.50...40.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.5 > 1000s.: (3.5)

Residual-Delivery Setting

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 5.0...6.0

Shutoff

electromagnet Volt: 12.0 Dispersion cm3/: 2.0 > 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 240.

Del. quantity cm3/

> 1000s.: 13.00...17.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.00...90.00

mind> 1000s.: 40.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/

difference> 1000s.: - 7.0...13.0 \*

Shutoff

electromagnet>Volt: 12.0 TD-travel dif.measurement

1. Speed 1/min: 1250

TD-travel

difference> mm: - 0.9...1.1 \*

Shutoff

electromagnet>Volt: 12.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteris	tic: +	Shutoff	
	+	electromagnet Volt:	12
1st speed 1/min: 1250	·	Del. quantity cm3/:	
TD travel mm: 3.7			(11.019.0)
> mm: (3.1.	4.7)	3rd speed 1/min:	2250
electromagnet>Volt: 12.0	+	Shutoff	
2nd speed 1/min: 1700	+	electromagnet>Volt:	
TD travel mm: 5.60.		Del. quantity cm3/:	
> mm: (5.20	6.80) +		(23.035.0)
Shutoff	+	4th speed 1/min:	1850
electromagnet>Volt: 12	+	Shutoff	
3rd speed 1/min: 750	+	electromagnet>Volt:	12.0
TD travel mm: 1.10.	1.90	Del. quantity cm3/:	40.042.0
> mm: (0.70	2.30)	> 1000s.:	(38.843.2)
Shutoff	+	5th speed 1/min:	
electromagnet>Volt: 12	+	Shutoff	
•	+	electromagnet>Volt:	12
Supply-pump pressure chara	acteristic:	Del. quantity cm3/:	39.5040.50
, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	1		(37.8042.20
1st speed 1/min: 1250	1	6th speed 1/min:	
Supply-pump	1	Shutoff	130
pressure> bar: 5.30.	5.90	electromagnet>Volt:	12.0
> bar: -	1	Del. quantity cm3/:	
Shutoff	1	> 1000s.:	(35.541.5)
electromagnet>Volt: 12	1	7th speed 1/min:	
2nd speed 1/min: 1700	1	Shutoff	450
Supply—pump	$\mathbf{I}$	electromagnet>Volt:	12.0
pressure> bar: 6.60.	7 20	Del. quantity cm3/:	
> bar: -	<u> </u>		(33.544.5)
Shutoff	$\mathbf{I}$	/ 10003	(33.344.3)
electromagnet>Volt: 12	$\mathbf{I}$		
3rd speed 1/min: 750	T		
	T	Electr. shutoff:	
Supply-pump pressure bar: 3.80	, ,o	Electr. Shutoff:	
•	7	1st speed 1/min.	/25
> bar: - Shutoff	T	1st speed 1/min:	
	T	Del. quantity cm3/: > 1000s.:	(0.003.00)
electromagnet>Volt: 12	Ť	Shutoff	(0.005.00)
Occambaco monadato da accambi	T		
Overlow quantity at overfl	low valve:	electromagnet>volt:	-
1st speed 1/min, 750	†	Name and street	
1st speed 1/min: 750	Ť	Damper set qty.:	
Shutoff	†	1.50	
electromagnet>Volt: 12	0(40	LFG-setting:	
Overflow : 41.70.		<b>≠</b> all =8 = 1.2	
quantity> cm3/10s: (26.70	····101.10) †	Idle delivery:	
2nd speed 1/min: 1850	†		/OF
Shutoff	†	1st speed 1/min:	425
electromagnet>Volt: 12	170.00	Shutoff	40.0
	139.00	electromagnet Volt:	
quantity> cm3/10s: (40.60	1154.00)	Del. quantity cm3/:	
	. +	> 1000s.:	(2.510.5)
Delivery-quant. and breaka	way char.:		
	†	High Idle:	
4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	†		500
1nd speed 1/min: 1650	†	1st speed 1/mi:	<b>ンUU</b>
Shutoff	+	Shutoff	
electromagnet>Volt: 12	+	electromagnet>Volt:	
Del. quantity cm3/: 0.0	3.U †	Del. quantity cm3/:	
> 1000s.: -	+	> 1000s.:	(2.510.5)
2nd speed 1/min: 2400	+		

Rest delivery:	2nd speed 1/min: 180
+	Shutoff
1st speed 1/min: 550 +	electromagnet>Volt: 12.0
Shutoff +	Del. quantity cm3/: 40.090.0
electromagnet>Volt: 12.0	> 1000s.: -
Del. quantity cm3/: 5.06.0	
> 1000s.: (3.57.5)	3rd speed 1/min: 100
2nd speed 1/min: 515	Shutoff
Shutoff	
	electromagnet>Volt: 12.0
electromagnet Volt: 12.0	Del. quantity cm3/: 40.090.0
Del. quantity cm3/: 5.57.5	> 1000s.: -
> 1000s.: (4.09.0)	
+	Shutoff electromagnet:
Load dependent start of delivery:	·
Injqty.dif.measurement:	Cut-in
1	>min voltage : 10.0
1st speed 1/min: 1250	Rated voltage : 12.0
Inj.—qty. cm3/ : 0.03.0 Z "	Nateu Voltage . 12.0
	86
difference> 1000s.: -	Mounting and assembly dimensions:
Shutoff +	
electromagnet>Volt: 12.0	Designation
+	K mm: 3.23.4
TD-travel dif.measurement:	KF mm: 5.15.5
correttore anticipo iniezione (SV):	MS mm: 1.21.4
1st speed 1/min: 1250	XK mm: MIKROSCH.
TD-travel : - 1.31.7 "	XL mm: 0.83.0 *
difference (0.0 2.1)	
difference> mm: - (0.92.1)	Ya mm: 20.022.0
Shutoff	Yb mm: 6172.5
electromagnet>Volt: 12.0 +	
The state of the s	
+	Remarks:
SP press.—dif.measurement:	Remarks:
	Remarks: :
pompa di mandata (FP):	<b>:</b> <b>:</b>
pompa di mandata (FP): 1st speed 1/min: 1250	: : Ya = Distance between VE flange and
pompa di mandata (FP): 1st speed 1/min: 1250 + Supply pump-	: : Ya = Distance between VE flange and speed-control lever in idle
pompa di mandata (FP):  1st speed  1/min: 1250	: : Ya = Distance between VE flange and speed-control lever in idle position
pompa di mandata (FP):  1st speed  1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)	: : Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff	: : Ya = Distance between VE flange and speed-control lever in idle position
pompa di mandata (FP):  1st speed  1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)	: : Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty.	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set)	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF)	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF)	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF)	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > :-0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 *	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0	: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 *	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > :-0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 * > 1000s.: (19.025.0)	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.  Following pump adjustment, screw out
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 *	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > :-0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 * > 1000s.: (19.025.0)  Automatic starting fuel delivery:	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.  Following pump adjustment, screw out
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > :-0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 * > 1000S.: (19.025.0)  Automatic starting fuel delivery:  1st speed 1/min: 380	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.  Following pump adjustment, screw out
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > :-0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 * > 1000S.: (19.025.0)  Automatic starting fuel delivery:  1st speed 1/min: 380 Shutoff	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.  Following pump adjustment, screw out
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > : - 0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 * > 1000s.: (19.025.0)  Automatic starting fuel delivery:  1st speed 1/min: 380 Shutoff electromagnet>Volt: 12.0	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.  Following pump adjustment, screw out
pompa di mandata (FP):  1st speed 1/min: 1250  Supply pump- pressure > :-0.71.1 "  difference> bar: - (0.51.3)  Shutoff electromagnet>Volt: 12.0  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 21.023.0 * > 1000S.: (19.025.0)  Automatic starting fuel delivery:  1st speed 1/min: 380 Shutoff	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end  On initial measurement, screw in residual-quantity adjusting screw 2 mm.  Following pump adjustment, screw out

Note inst. in remarks column

Test scheet : REN

Edition : 07.08.95

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/9F2400R581 Type number : 0 460 494 357

Customer Part-No. :

Customer-specific information Customer : RENAULT

Engine : G8T - 752

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening |

Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery

Prestroke mm: 
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 2.30...2.70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.90...6.50

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

> 1000s.: 36.9...37.9

Shutoff

electromagnet>Volt: 12.0 Dispersion cm3/: 2.5 > 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 450

Del. quantity cm3/

> 1000s.: 3.00...7.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600

Del. quantity cm3/

> 1000s.: 20.....26.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 45.00...75.00

mind> 1000s.: 45.00

Shutoff

electromagnet>Volts 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/

difference> 1000S.: -7.40...11.40 \*

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1.Speed 1/min: 1250

TD-travel

difference> mm: -0.7...0.9 \*

Shutoff

electromagnet>Volt: 12.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min:	2000	+	Overflow :	55.60139.00
TD travel mm:	6.006.80	+	quantity> cm3/10s:	
	(5.807.00)	+	•	
KSB/AFB		+	Delivery quant. and	breakaway char.:
valve > Volt:	: <del>-</del>	†		
Shutoff electromagnet>Volt:	. 12	Ī	2nd speed 1/min:	2800
3rd speed 1/min:		I	Shutoff	2000
	2.302.70	1	electromagnet Volt:	12
	(2.003.00)	1	Del. quantity cm3/:	
KSB/AFB		+		(0.005.00)
valve > Volt:	-	+	5th speed 1/min:	2600
Shutoff	•	+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt:	
4th speed 1/min:		†	Del. quantity cm3/:	
	0.601.40 (0.401.60)	Ī	> 1000s.: 8th speed 1/min:	(19.0027.00)
KSB/AFB	(0.401.00)	I	Shutoff	2,000
valve > Volt:	_	1	electromagnet>Volt:	12
Shutoff		1	Del. quantity cm3/:	31.5039.50
electromagnet>Volt:	12	+	> 1000s.:	(30.5040.50)
9th speed 1/min:	750	+	9th speed 1/min:	2300
	0.002.20	+	Shutoff	
	(0.202.20)	+	electromagnet>Volt:	
KSB/AFB	13.8	†	Del. quantity cm3/:	
<pre>valve &gt; Volt: Shutoff</pre>	12.0	†		(38.7043.70)
electromagnet>Volt:	12 N	Ι	10th speed 1/min: Shutoff	2000
eccon onagrict/vocc.	12.0	I	electromagnet>Volt:	12
Supply-pump pressur	e characteristic:	1	Del. quantity cm3/:	
and the same terminal		+		(38.0042.60)
1st speed 1/min:	750	+	12th speed 1/min:	1250
Supply-pump		+	Shutoff	
•	4.405.00	+	electromagnet>Volt:	12
> bar:	_	†	Del. quantity cm3/:	36.9037.90
Shutoff electromagnet>Volts	12	<b>†</b>	> 1000s.: 15th speed 1/min:	(35.139.7)
2nd speed 1/min:		Ι	Shutoff	1000
Supply-pump	7230	1	electromagnet>Volt:	12
	5.906.50	1	Del. quantity cm3/:	
> bar:		+	> 1000s.:	(35.4040.00)
Shutoff		+	20th speed 1/min:	750
electromagnet>Volt:		+	Shutoff	
3rd speed 1/min:	2000	†	electromagnet>Volt:	
Supply-pump	7.908.50	†	かき、quantity cm3/:	(34.2038.80)
pressure> bar: > bar:		Ι	/ 10003	(34.2030.60)
Shutoff Shutoff		1		
electromagnet>Volt:	12	∔		
		∔	Electr. shutoff:	
Overlow quantity at	overflow valve:	+		
		+	1st speed 1/min:	
1st speed 1/min:	750	†	Del. quantity cm3/:	
Shutoff	13	†		(0.003.00)
electromagnet>Volt: Overflow:	41.7086.10	Ι	Shutoff electromagnet>volt:	***
quantity> cm3/10s:	(26.70101.10)	I	erectionagner/vort:	
2nd speed 1/min:	2300	1	Damper set qty.:	
Shutoff		+		
electromagnet>Volt:	12	+	LFG-setting:	

	des dischargement ADE)
Idle delivery:	+ gaz d'échappement-ARF) + Spacing mm: 12.0
1st speed	1st speed 1/min: 1250 Shutoff
electromagnet Volt: 12	+ electromagnet>Volt: 12
Del. quantity cm3/: 12.016.0	+ Del. quantity cm3/: 22.5023.50
> 1000s.: (10.018.0)	† > 1000s.: (20.5025.50)
High Idle:	Automatic starting fuel delivery:
1st speed 1/mi: 435 Shutoff	1st speed 1/min: 200 Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
Del. quantity cm3/: 10.014.0	+ Del. quantity cm3/: 45.0095.00
> 1000s.: (8.0016.00)	> 1000s.: (45.0095.00)
Rest delivery:	2nd speed 1/min: 350 Shutoff
1st speed 1/min: 450	+ electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 15.0045.00
electromagnet>Volt: 12	† > 1000s.: (15.0045.00)
Del. quantity cm3/: 3.007.00 > 1000s.: (1.009.00)	4th speed 1/min: 100
Load-dependent start of delivery:	+ Shutoff
Inj.—qty.dif.measurement:	+ electromagnet>Volt: 12 + Del. quantity cm3/: 45.0075.00
ing. qcy.arr.measarement.	+ > 1000s.: (45 _075.00)
1st speed 1/min: 1250	10000(45.00)
Injqty. cm3/ : -6.18.1 " difference> 1000s.: -	Shutoff electromagnet:
Shutoff	+ Cut-in
electromagnet>Volt: 12	→ >min voltage : 10.0
2nd speed	+ Rated voltage : 12.0
Injqty. cm3/: 2.08.0 Z'	†
difference> 1000s.: - Shutoff	+ Mounting and assembly dimensions:
electromagnet Volt: 12.0	+ Designation
	+ K mm: 3.63.8
TD-travel dif.measurement:	+ KF mm: 4.74.9
correttore anticipo iniezione (SV):	+ MS mm: 0.70.9
1st speed	+ Ya mm: 37.241.2 + Yb mm: 61.369.7
difference mm: -	† Yb mm: 61.369.7
Shutoff	Remarks:
electromagnet>Volt: 12	- Nomar Ro
	<u> </u>
SP pressdif.measurement:	+ Ya = Distance between VE flange and
pompa di mandata (FP):	+ speed-control lever in idle
1st speed 1/min: 1250	+ position
Supply pump-	+ Measurement point = edge of control
pressure > : -0.10.3 "	t lever on drive end
difference> bar: -	†
Shutoff electromagnet>Volt: 12	Yb = Distance between VE flange and
esectionagnet/vott. (&	+ speed-control lever in rated speed
Part-load del.at 3rd injqty.	+ position
terza fermo della portata	+ Measurement point = edge of control
stop (EGR set)	+ Lever on distributor-head end
scarico) (ARF)	+

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : REN Edition : 07.08.95

replaces :-

Calibrating oil : ISO-4113

Injection pump : VE4/9F2400R581-1 Type number : 0 460 494 358

Customer Part-No. :

Customer—specific information Customer : RENAULT

Engine : G8T - 752

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening |

Pressure> bar: 130.00...133.00

Test ini. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 2.30...2.70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.90...6.50

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

> 1000s.: 36.9...37.9

Shutoff

electromagnet>Volt: 12.0 Dispersion cm3/: 2.5 > 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 450

Del. quantity cm3/

> 1000s.: 3.00...7.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600

Del. quantity cm3/

> 1000s.: 20......26.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 45.00...75.00

mind> 1000s.: 45.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/

difference> 1000S.: -7.40...11.40 \*

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1.Speed 1/min: 1250

TD-travel

difference> mm: -0.7...0.9 \*

Shutoff

electromagnet>Volt: 12.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: TD travel mm:	2000 6.006.80	‡	Overflow : quantity> cm3/10s:	55.60139.00 (40.60154.00)
	(5.807.00)	+	Nalaurani muruk and	handan atau
KSB/AFB valve > Volt:	_	†	Delivery-quant. and	breakaway char.:
Shutoff	_	I		
electromagnet>Volt:	12	Ι	2nd speed 1/min:	2800
3rd speed 1/min:	1250	I	Shutoff	2000
	2.302.70	1	electromagnet Volt:	12
	(2.003.00)	1	Del. quantity cm3/:	
KSB/AFB	(2.00)	1		(0.005.00)
valve > Volt:		1	5th speed 1/min:	
Shutoff		1	Shutoff	2000
electromagnet>Volt:	12	1	electromagnet>Volt:	12
4th speed 1/min:		1	Del. quantity cm3/:	
	0.601.40	+		(19.0027.00)
>	(0.401.60)	1	8th speed 1/min:	
KSB/AFB		1	Shutoff	
valve > Volt:	_	1	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	31.5039.50
electromagnet>Volt:	12	+	> 1000s.:	(30.5040.50)
9th speed 1/min:	750	+	9th speed 1/min:	
TD travel mm:	0.002.20	+	Shutoff	
	(0.202.20)	+	electromagnet>Volt:	12
KSB/AFB		+	Del. quantity cm3/:	40.0042.00
valve > Volt:	12.0	+	> 1000s.:	(38.7043.70)
Shutoff		+	10th speed 1/min:	2000
electromagnet>Volt:	12.0	+	Shutoff	
_		+	electromagnet>Volt:	12
Supply-pump pressur	e characteristic:	<del> </del>	Del. quantity cm3/:	
		+		(38.0042.60)
1st speed 1/min:	750	+	12th speed 1/min:	1250
Supply-pump		+	Shutoff	
pressure> bar:	4.405.00	+	electromagnet>Volt:	12
> bar:	-	+	Del. quantity cm3/:	36.9037.90
Shutoff		+		(35.139.7)
electromagnet>Volt:		+	15th speed 1/min:	1000
2nd speed 1/min:	1250	+	Shutoff	
Supply-pump	•	+	electromagnet>Volt:	
•	5.906.50	+	Del. quantity cm3/:	36.2039.20
> bar:	-	†	> 1000s.:	(35,4040.00)
Shutoff		†	20th speed 1/min:	750
electromagnet>Volt:		†	Shutoff	
3rd speed 1/min:	2000 -	†	electromagnet>Volt:	
Subbfa-brumb	7.00	†	Del. quantity cm3/:	
•	7.908.50	†	> 1000s.:	(34.2038.80)
> bar:	-	†		
Shutoff	42	t		
electromagnet>Volt:	12 -	†		
A		†	Electr. shutoff:	
Overlow quantity at	overtiow valve:	Ť	1-+ 1 /	705
1-+ 1/	750	<b>†</b>	1st speed 1/min:	
1st speed 1/min:	750 -	T	Del. quantity cm3/:	
Shutoff electromagnet>Volt:	12	Ι	Shutoff	(0.003.00)
	41.7086.10	I	electromagnet>volt:	_
	(26.70101.10)	Ι	etetti omagnet/vott:	
2nd speed 1/min:		Ι	Damper set atv .	
Shutoff		Ĺ	Damper set qty.:	
electromagnet>Volt:	12	L	LFG-setting:	
Ctotti omagnict/vott.	T San	ŧ	El a actellig.	

Idle delivery:	+ gaz d'échappement-ARF) + Spacing mm: 12.0
1st speed 1/min: 385 Shutoff	+ 1st speed 1/min: 1250 + Shutoff
electromagnet Volt: 12	+ electromagnet>Volt: 12
Del. quantity cm3/: 12.016.0	+ Del. quantity cm3/: 22.5023.50
> 1000s.: (10.018.0)	† > 1000s.: (20.5025.50)
High Idle:	Automatic starting fuel delivery:
1st speed 1/mi: 435 Shutoff	1st speed 1/min: 200 Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
Del. quantity cm3/: 10.014.0	+ Del. quantity cm3/: 45.0095.00
> 1000s.: (8.0016.00)	+ > 1000s.: (45.0095.00)
Rest delivery:	2nd speed 1/min: 350 Shutoff
1st speed 1/min: 450	+ electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 15.0045.00
electromagnet>Volt: 12	+ > 1000s.: (15.0045.00)
Del. quantity cm3/: 3.007.00	+
> 1000s.: (1.009.00)	+ 4th speed 1/min: 100 + Shutoff
Load-dependent start of delivery:	+ electromagnet>Volt: 12
Injqty.dif.measurement:	+ Del. quantity cm3/: 45.0075.00 + > 1000s.: (45 _075.00)
1st speed 1/min: 1250	+
Injqty. cm3/ : -6.18.1 " difference> 1000s.: -	+ Shutoff electromagnet:
Shutoff	+ Cut-in
electromagnet>Volt: 12	+ >min voltage : 10.0
2nd speed 1/min: 1250	Rated voltage : 12.0
Inj.—qty. cm3/: 2.08.0 Z'	Marine and marentin discussions
difference> 1000s.: - Shutoff	Mounting and assembly dimensions:
electromagnet Volt: 12.0	Designation
1213	+ K mm: 3.63.8
TD-travel dif.measurement:	+ KF mm: 4.74.9
correttore anticipo iniezione (SV):	+ MS mm: 0.70.9
1st speed	+ Ya mm: 37.241.2
TD-travel : -1.01.4 '	+ Yb mm: 61.369.7
difference> mm: -	† Bernarka
Shutoff electromagnet>Volt: 12	Remarks:
ececti Gilagilet 2000. 12	
SP pressdif.measurement:	Ya = Distance between VE flange and
pompa di mandata (FP):	+ speed-control lever in idle
1st speed 1/min: 1250	+ position
Supply pump-	+ Measurement point = edge of control
pressure > : -0.10.3 "	t lever on drive end
difference> bar: - Shutoff	I
electromagnet>Volt: 12	T Yb = Distance between VE flange and
Coot oningnor voter 12	+ speed-control lever in rated speed
Part-load del.at 3rd injqty.	+ position
terza fermo della portata	+ Measurement point = edge of control
stop (EGR set)	+ Lever on distributor-head end
scarico) (ARF)	+

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Shutoff Note inst. in remarks column Test scheet : REN : 04.08.95 Edition replaces Speed Calibrating oil : ISO-4113 Injection pump : VE4/9F2250R593 Shutoff : 0 460 494 359 Type number Customer Part-No. : Customer-specific information Customer : RENAULT Engine : G8T-760 CA Shutoff KW: 81 Power TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil Speed return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Shutoff Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Speed Opening Pressure> bar: 130.00...133.00 Shutoff Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Speed Start of delivery Prestroke mm: -Shutoff > (from BDC): -Indicator setting Piston stroke> mm: 0,74 Outlet> Injection-pump setting values Test specifications in parentheses > Shutoff Timing-device travel

Charge press. hPa: 1000 Setting value mm: 2.60...3.00 electromagnet>Volt: 12 Supply-pump pressure 1/min: 1250 Charge press hPa: 1000 Setting value bar: 5.10...5.70 electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1250 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 58.20...59.20 electromagnet>Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 500 Del. quantity cm3/ 1000s.: 42.5...43.5 electromagnet>Volt: 12.0 Low-idle speed regulation 1/min: 350 Del. quantity cm3/ 1000s.: 19.5...23.5 electromagnet>Volt: 12.0 Del. quantity cm3/: 2.5 1000s.: (2.5) Residual-Delivery Setting 1/min: 450 Del. quantity cm3/ 1000s.: 5.00...9.00 electromagnet Volt: 12 Full-load speed regulation 1/min: 2450 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 27.0...33.0 electromagnet>Volt: 12 Start:

Speed

1/min: 1250

Supply-pump pressure characteristic: 1/min: 100 Speed Del. quantity cm3/: 47.50...52.50 1st speed 1/min: 500 1000s.: 47.00 mind> Charge press. hPa: 1000 Shutoff Supply-pump electromagnet>Volt: 12 pressure> bar: 3.30...3.90 bar: -Load-dependent start of delivery: Shutoff Ini.-qty.dif.measurement: electromagnet>Volt: 12 2nd speed 1/min: 1250 Speed 1/min: 1250 Charge press. hPa: 1000 Charge press hPa: -Supply-pump Inj.-qty. cm3/bar: 5.10...5.70 pressure> difference> 1000s.: - 9.0...13.0 \* bar: -Shutoff Timing valve Volt: electromagnet>Volt: 12.0 Shutoff TD-travel dif.measurement electromagnet>Volt: 12 3rd speed 1/min: 2150 1/min: 1250 1.Speed Charge press. hPa: 1000 Charge press hPa: -Supply-pump TD-travel bar: 6.90...7.50 pressure> difference> mm: -0.6...0.8 \*bar: -Shutoff Shutoff electromagnet>Volt: 12.0 electromagnet>Volt: 12 Inspection-pump test specifications Overlow quantity at overflow valve: Test specifications in parentheses 1st speed 1/min: 500 Timing-device characteristic: Charge press. hPa: 1000 Shutoff 1st speed 1/min: 600 electromagnet>Volt: 12.0 hPa: 1000 Charge press Overflow : 50.00...94.40 mm: 1.50...3.90 quantity> cm3/10s: (35.00...1ú9.4) TD travel 1/min: 2150 mm: -2nd speed KSB/AFB Charge press. hPa: 1000 Shutoff > Volt: 12.0 valve electromagnet>Volt: 12.0 electromagnet>Volt: 12.0 1/min: 1000 : 77.70...161.10 2nd speed Overflow Charge press hPa: 1000 quantity> cm3/10s: (62.70...176.10) mm: 1.50...2.30 TD travel mm: (1.30...2.50) Delivery-quant. and breakaway char.: KSB/AFB valve > Volt: -1/min: 750 Shutoff 1nd speed electromagnet>Volt: 12.0 Charge-air pressure-setting 1/min: 1250 3rd speed point> hPa: 300 hPa: 1000 Charge press LDA-stroke mm: 7.3 TD travel mm: 2.60...3.00 Shutoff mm: (2.30...3.30) electromagnet>Volt: 12.0 Del. quantity cm3/: 49.5...50.5 Timing valve Volt: -Shutoff 1000s.: (47.7...52.3) 1/min: 2600 electromagnet>Volt: 12.0 2nd speed 1/min: 2150 Charge press. hPa: 1000 4th speed hPa: 1000 Shutoff Charge press mm: 5.50...6.30 electromagnet Volt: 12.0 TD travel Del. quantity cm3/: 0.00...5.00 mm: (5.30...6.50) Timing valve Volt: -1000s.: (0.00...5.00) Shutoff 3rd speed 1/min: 2550 electromagnet>Volt: 12.0 Charge press. hPa: 1000 Shutoff

electromagnet>Volt:	12.0	+	Shutoff	
Del. quantity cm3/:	6.514.5	+	electromagnet Volt:	12.0
	(5.5015.50)	+	Del. quantity cm3/:	
4th speed 1/min:		+	> 1000s.:	(17.525.5)
Charge press. hPa:	1000	†	11 • t 41	
Shutoff	40.0	+	High Idle:	
electromagnet>Volt:		+		
Del. quantity cm3/:		+	1st speed 1/mi:	400
> 1000s.:	(26.034.0)	+	Shutoff	
5th speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	7000	+	Del. quantity cm3/:	17.521.5
Shutoff	40.0	+	> 1000s.:	(15.523.5)
electromagnet>Volt:		†	Bank dali an	
Del. quantity cm3/:		<b>T</b>	Rest delivery:	
	(54.4059.00)	<b>†</b>	4-4	150
6th speed 1/min:		Ť	1st speed 1/min:	450
Charge press. hPa: Shutoff	1000	Ť	Shutoff	12.0
electromagnet>Volt:	12.0	T	electromagnet>Volt:	
		T	Del. quantity cm3/:	
Del. quantity cm3/:	(56.461.0)	Ť	> 1000s.:	<del>-</del>
		T		ينسخ باسلنگ سيد
7th speed 1/min: Charge press. hPa:	1000	T	Load-dependent star	
Shutoff	1000	T	Inj.—qty.dif.measure	emeric:
electromagnet>Volt:	12 N	Ι	1st speed 1/min:	1250
Del. quantity cm3/:	58 1 61 1	Ι	Charge press. hPa:	
> 1000s.:	(57.361.9)	Ι	Injqty. cm3/ :	-75 05"
8th speed 1/min:		Ι	difference> 1000S.:	
Charge press. hPa:		Ţ	Shutoff	
Shutoff	1000	Ι	electromagnet>Volt:	12.0
electromagnet>Volt:	12.0	Ι	2nd speed 1/min:	
Del. quantity cm3/:	55 70 58 70	Ι	Charge press. hPa:	
> 1000s.:	(54.9059.50)	Ι	Injqty. cm3/:	
9th speed 1/min:		$\mathbf{I}$	difference> 1000S.:	
Charge press. hPa:		1	3rd speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12.0	1	Inj.—qty. cm3/:	
Del. quantity cm3/:	42.5043.50	1	difference> 1000S.:	
> 1000s.:	(40.7045.30)	1	KSB/AFB	
, 333311		1	valve > Volt:	12.0
		1	Shutoff	.2.0
		+	electromagnet>Volt:	12.0
Electr. shutoff:		1		
		+	TD-travel dif.measur	rement:
1st speed 1/min:	350	+	correttore anticipo	iniezione (SV):
Charge press. hPa:	-	+	1st speed 1/min:	1250
Del. quantity cm3/:		+	Charge press. hPa:	
	(0.003.00)	+		-0.30.9 '
Shutoff		+	difference> mm:	-
electromagnet>volt:		+	Shutoff	
Timing valve Volt:	<del></del>	+	electromagnet>Volt:	
		+	2nd speed 1/min:	
Damper set qty.:		+	Charge press. hPa:	
		†		0.00.6 **
LFG-setting:		†	difference> mm:	-
		+	KSB/AFB	40.0
Idle delivery:		†	<pre>valve &gt; Volt:</pre>	12.0
And many death of the	750	†	Shutoff	42 <b>0</b>
1st speed 1/min:		†	electromagnet>Volt:	12.0
Timing valve Volt:	<del></del>	+		

SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Charge press. hPa: -Supply pumppressure > : - 0.1...0.3 " difference> bar: -Shutoff electromagnet>Volt: 12.0 Automatic starting fuel delivery: 1/min: 200 1st speed Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 50.00...70.00 1000s.: -2nd speed 1/min: 300 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 30.00...50.00 1000s.: -1/min: 100 4th speed Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 47.50...52.50 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 K mm: 6.00 KF mm: 0.7...1.1 MS LDA stroke mm: 7.3 mm: 37.2...41.2 Ya mm: 61.3...69.7 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control

lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : REN Edition : 04.08.95 replaces : ISO-4113 Calibrating oil : VE4/9F2250R593-1 Injection pump : 0 460 494 360 Type number Customer Part-No. : Customer-specific information : RENAULT Customer : G8T-760 CA Engine KW: 81 Power TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Opening | bar: 130.00...133.00 Pressure> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery mm: -Prestroke (from BDC): -Indicator setting Piston stroke> mm: 0,74 Outlet> Injection-pump setting values

Test specifications in parentheses

1/min: 1250

Timing-device travel

Charge press. hPa: 1000 Setting value mm: 2.60...3.00 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1250 Speed Charge press hPa: 1000 Setting value bar: 5.10...5.70 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1250 Speed Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 58.20...59.20 Shutoff electromagnet>Volt: 12 cm3/: 2.0 Dispersion 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 42.5...43.5 Shutoff electromagnet>Volt: 12.0 Low-idle speed regulation 1/min: 350 Del. quantity cm3/ 1000s.: 19.5...23.5 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 2.5 1000s.: (2.5) Residual-Delivery Setting 1/min: 450 Speed Del. quantity cm3/ 1000s.: 5.00...9.00 > Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2450 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 27.0...33.0 Shutoff electromagnet>Volt: 12

Start:

N18

Speed

Supply-pump pressure characteristic: 1/min: 100 Speed Del. quantity cm3/: 47.50...52.50 1st speed 1/min: 500 1000s.: 47.00 mind> Charge press. hPa: 1000 Shutoff Supply-pump electromagnet>Volt: 12 bar: 3.30...3.90 pressure> bar: -> Load-dependent start of delivery: Shutoff Inj.-qty.dif.measurement: electromagnet>Volt: 12 1/min: 1250 2nd speed Speed 1/min: 1250 Charge press. hPa: 1000 Charge press hPa: -Supply-pump Inj.-qty. bar: 5.10...5.70 cm3/pressure> difference> 1000s.: - 9.0...13.0 \* bar: -Shutoff Timing valve Volt: electromagnet>Volt: 12.0 Shutoff TD-travel dif.measurement electromagnet>Volt: 12 3rd speed 1/min: 2150 1.Speed 1/min: 1250 Charge press. hPa: 1000 Charge press hPa: -Supply-pump TD-travel bar: 6.90...7.50 pressure> difference> mm: -0.6...0.8 \*> bar: -Shutoff Shutoff electromagnet>Volt: 12.0 electromagnet>Volt: 12 Inspection pump test specifications Overlow quantity at overflow valve: Test specifications in parentheses 1st speed 1/min: 500 Timing-device characteristic: Charge press. hPa: 1000 Shutoff 1st speed 1/min: 600 electromagnet>Volt: 12.0 hPa: 1000 : 50.00...94.40 Charge press Overflow mm: 1.50...3.90 quantity> cm3/10s: (35.00...1û9.4) TD travel 1/min: 2150 > mm: -2nd speed KSB/AFB Charge press. hPa: 1000 Volt: 12.0 Shutoff valve > electromagnet>Volt: 12.0 electromagnet>Volt: 12.0 1/min: 1000 : 77.70...161.10 2nd speed Overflow hPa: 1000 quantity> cm3/10s: (62.70...176.10) Charge press mm: 1.50...2.30 TD travel mm: (1.30...2.50) > Delivery-quant. and breakaway char.: KSB/AFB valve Volt: -Shutoff 1/min: 750 1nd speed electromagnet>Volt: 12.0 Charge-air pressure-setting 3rd speed 1/min: 1250 point> hPa: 300 hPa: 1000 Charge press LDA-stroke mm: 7.3 TD travel mm: 2.60...3.00 Shutoff mm: (2.30...3.30) electromagnet>Volt: 12.0 Del. quantity cm3/: 49.5...50.5 Timing valve Volt: -1000s.: (47.7...52.3) 1/min: 2600 Shutoff electromagnet>Volt: 12.0 2nd speed 1/min: 2150 4th speed Charge press. hPa: 1000 hPa: 1000 Shutoff Charge press mm: 5.50...6.30 TD travel electromagnet Volt: 12.0 Del. quantity cm3/: 0.00...5.00 mm: (5.30...6.50) 1000s.: (0.00...5.00) Timing valve Volt: -1/min: 2550 Shutoff 3rd speed Charge press. hPa: 1000 electromagnet>Volt: 12.0 Shutoff

electromagnet>Volt:		+	Shutoff
Del. quantity cm3/:		+	electromagnet Volt: 12.0
	(5.5015.50)	+	Del. quantity cm3/: 19.523.5
4th speed 1/min:		+	> 1000s.: (17.525.5)
Charge press. hPa:	1000	+	
Shutoff	40.0	+	High Idle:
electromagnet>Volt:		+	
Del. quantity cm3/:		+	1st speed 1/mi: 400
	(26.034.0)	+	Shutoff
5th speed 1/min:		Ť	electromagnet>Volt: 12.0
Charge press. hPa:	1000	+	Del. quantity cm3/: 17.521.5
Shutoff	40.0	+	> 1000s.: (15.523.5)
electromagnet>Volt:	12.0	Ť	
Del. quantity cm3/:	55.7U58.7U	†	Rest delivery:
	(54.4059.00)	†	4
6th speed 1/min:		†	1st speed 1/min: 450
Charge press. hPa:	1000	†	Shutoff
Shutoff	42.0	+	electromagnet>Volt: 12.0
electromagnet>Volt:		+	Del. quantity cm3/: 5.09.0
Del. quantity cm3/:		†	> 1000s.: -
	(56.461.0)	+	
7th speed 1/min:		†	Load-dependent start of delivery:
Charge press. hPa:	7000	+	<pre>Injqty.dif.measurement:</pre>
Shutoff	40.0	†	
electromagnet>Volt:	12.0	†	1st speed
Del. quantity cm3/:		+	Charge press. hPa: -
	(57.361.9)	†	Injqty. cm3/ : - 7 59.5 "
8th speed 1/min:		+	difference> 1000s.: -
Charge press. hPa:	1000	+	Shutoff
Shutoff		+	electromagnet>Volt: 12.0
electromagnet>Volt:	12.0	+	2nd speed 1/min: 1250
Del. quantity cm3/:		+	Charge press. hPa: -
	(54.9059.50)	+	Injqty. cm3/: 2.08.0 \( \alpha' \)
9th speed 1/min:		+	difference> 1000s.: -
Charge press. hPa:	~	+	3rd speed 1/min: 1250
Shutoff		+	Charge press. hPa: ALFB
electromagnet>Volt:	12.0	+	Injqty. cm3/: 2.08.0 Z**
Del. quantity cm3/:	42.5043.50	+	difference> 1000s.: -
> 1000s.:	(40.7045.30)	+	KSB/AFB
		†	valve > Volt: 12.0
		+	Shutoff
mt		†	electromagnet>Volt: 12.0
Electr. shutoff:		†	The two colds of the control of
1-t onesd 1/min.	750	†	TD-travel dif.measurement:
1st speed 1/min:		Ť	correttore anticipo iniezione (SV)
Charge press. hPa:	0.00 7.00	Ť	1st speed 1/min: 1250
Del. quantity cm3/:		Ť	Charge press. hPa: -
	(0.003.00)	Ť	TD-travel : -0.30.9 '
Shutoff		†	difference> mm: -
electromagnet>volt:		†	Shutoff
Timing valve Volt:	_	Ť	electromagnet>Volt: 12.0
Damasa ask aku.		Ť	2nd speed 1/min: 1250
Damper set qty.:		T	Charge press. hPa: ALFB
1 EC-cotting:		Ť	TD-travel : 0.00.6 **
LFG-setting:		T	difference> mm: -
Tallo dol tuonus		T	KSB/AFB
Idle delivery:		T	valve > Volt: 12.0 Shutoff
1st speed 1/min:	350	Ι	
		Ι	electromagnet>Volt: 12.0
Timing valve Volt:		T	

SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Charge press. hPa: -Supply pumppressure > : - 0.1...0.3 " difference> bar: -Shutoff electromagnet>Volt: 12.0 Automatic starting fuel delivery: 1st speed 1/min: 200 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 50.00...70.00 > 1000s.: -2nd speed 1/min: 300 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 30.00...50.00 1000s.: -4th speed 1/min: 100 Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 47.50...52.50 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.6...3.8 K KF · mm: 6.00 mm: 0.7...1.1 MS mm: 7.3 LDA stroke mm: 37.2...41.2 Ya mm: 61.3...69.7 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed

Measurement point = edge of control

lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VW Edition : 07.08.95 replaces Calibrating oil : ISO-4113 : VE4/9F2300R594 Injection pump Type number : 0 460 494 365 Customer Part-No. : Customer-specific information Customer : 1,9 L UD B4 Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 000 assembly> Opening bar: 147.00...150.00 Pressure> Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -Indicator setting Piston stroke> mm: 0.8 Outlet> : A Injection-pump setting values Test specifications in parentheses

Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1250 Speed Charge press hPa: 750 Setting value bar: 5.40...6.00 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1250 Charge press. hPa: 750 Del. quantity cm3/ 1000s.: 50.00...51.00 Shutoff electromagnet>Volt: 12 cm3/: 2.5Dispersion 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 450 Speed Del. quantity cm3/ 1000s.: 37.2...43.2 Shutoff electromagnet>Volt: 12.0 Residual-Delivery Setting 1/min: 550 Speed Del. quantity cm3/ 1000s.: 7.00...8.00 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2600 Speed Charge press hPa: 750 Del. quantity cm3/ 1000s.: 9.00...13.00 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 32.5...47.5 mind> 1000s.: 32.5 Shutoff electromagnet>Volt: 12.0 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1250 Speed

Inj.-qty.

cm3/

Speed

Timing-device travel

Charge press. hPa: 750

1/min: 1250

Setting value mm: 4.30...4.50

difference> 1000s.: -7.011.0 *	+
Shutoff	1st speed 1/min: 1250
electromagnet>Volt: 12	+ Charge press. hPa: 750
TD-travel dif.measurement	+ Shutoff
4 - 1 44 1 4000	+ electromagnet>Volt: 12
1. Speed 1/min: 1250	Overflow : 41.7086.10
TD-travel	+ quantity> cm3/10s: (26.70101.10)
difference> mm: -1.92.1 ★ Shutoff	2nd speed 1/min: 2100
electromagnet>Volt: 12	† Charge press. hPa: 750 + Shutoff
etetti dilagnet vott. 12	electromagnet>Volt: 12
Inspection pump test specifications	+ Overflow : 55.60152.90
Test specifications in parentheses	quantity> cm3/10s: (40.60167.90)
	+
Timing-device characteristic:	Delivery-quant. and breakaway char.
_	+
2nd speed 1/min: 2100	+
Charge press hPa: 750	+ 2nd speed 1/min: 2750
TD travel mm: 8.008.60	† Charge press. hPa: 750
> mm: (7.509.10)	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 0.003.00
3rd speed 1/min: 1250	+ > 1000s.: (0.003.00)
Charge press hPa: 750	+ 5th speed 1/min: 2600
TD travel mm: 4.304.50	+ Charge press. hPa: 750
> mm: (3.605.20)	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 9.013.00
4th speed 1/min: 750	+ > 1000s.: (7.0015.00)
Charge press hPa: 750	+ 8th speed 1/min: 2400
TD travel mm: 1.502.10	+ Charge press. hPa: 750
> mm: (1.002.60)	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	Del. quantity cm3/: 32.5042.50
	+ > 1000s.: (31.5043.50)
Supply-pump pressure characteristic:	+ 9th speed 1/min: 2100
	+ Charge press. hPa: 750
1st speed 1/min: 750	+ Shutoff
Charge press. hPa: 750	+ electromagnet>Volt: 12
Supply-pump	Del. quantity cm3/: 42.0044.00
pressure> bar: 4.304.90	+ > 1000s.: (40.8045.20)
> bar: -	+ 12th speed 1/min: 1250
Shutoff	+ Charge press. hPa: 750
electromagnet>Volt: 12	+ Shutoff
2nd speed 1/min: 1250	+ electromagnet>Volt: 12
Charge press. hPa: 750	Del. quantity cm3/: 50.0051.00
Supply-pump	+ > 1000s.: (48.352.7)
pressure> bar: 5.406.00	21th speed 1/min: 450
> bar: -	Charge press. hPa: -
Shutoff	Shutoff
electromagnet>Volt: 12	electromagnet>Volt: 12
3rd speed 1/min: 2100	Del. quantity cm3/: 37.2043.20
Charge press. hPa: 750	+ > 1000s.: (34.7045.70)
Supply-pump	Ť
pressure> bar: 7.408.00	Ť
> bar: -	The state of the s
Shutoff	+ Electr. shutoff:
electromagnet>Volt: 12	100 00000 4700
	1st speed 1/min: 450
Overlow quantity at overflow valve:	+ Del. quantity cm3/: 0.003.00

> 1000s.: (0.003.00)	+ Charge press. hPa: -
Shutoff	+ TD-travel : -2.52.9
electromagnet>volt: -	+ difference> mm: -
	+ Shutoff
Idle delivery:	+ electromagnet>Volt: 12
2000 000170171	The state of the s
	+ SP pressdif.measurement:
Damper set qty.:	+ pompa di mandata (FP):
vaniper set qty	+ 1st speed 1/min: 1250
Antonia 1/min 4000	
1st speed 1/min: 1000	+ Charge press. hPa: -
Shutoff	+ Supply pump-
electromagnet>Volt: 12.0	+ pressure > : -0.10.3 "
Del. quantity cm3/: 17.019.0	+ difference> bar: -
> 1000s.: (14.022.0)	+ Shutoff
	+ electromagnet>Volt: 12
LFG-setting:	+
-	+ Part-load del.at 3rd injqty.
Idle delivery:	+ terza fermo della portata
	+ stop (EGR set)
1st speed 1/min: 450	+ scarico) (ARF)
Shutoff	
	gaz d'échappement-ARF)
electromagnet Volt: 12	+ Spacing mm: 12.0
Del. quantity cm3/: 16.0018.00	†
> 1000s.: (13.0021.00)	+ 1st speed 1/min: 1000
	+ Charge press. hPa: 750
High Idle:	+ Shutoff
	+ electromagnet>Volt: 12
1st speed 1/mi: 500	+ Del. quantity cm3/: 3436.00
Shutoff	+ > 1000s.: (32.0038.00)
electromagnet>Volt: 12	1
Del. quantity cm3/: 16.0018.00	Automatic starting fuel delivery:
> 1000s.: (13.0021.00)	Additional to Starting ruce detivery.
70003 (13.0021.00)	1st speed 1/min: 180
Doot dolituomia	+ Shutoff
Rest delivery:	
4	+ electromagnet>Volt: 12
1st speed 1/min: 550	+ Del. quantity cm3/: 35.0055.00
Shutoff	+ > 1000s.: (35.0055.00)
electromagnet>Volt: 12	+
Del. quantity cm3/: 7.008.00	+ 2nd speed 1/min: 380
> 1000s.: (5.509.50)	+ Shutoff
	+ electromagnet>Volt: 12
Load-dependent start of delivery:	Del. quantity cm3/: 31.0051.00
Injqty.dif.measurement:	> 1000s.: (31.0051.00)
	1
1st speed 1/min: 1250	3rd speed 1/min: 100
Charge press. hPa: -	Shutoff
Injqty. cm3/ : -4.56.5 "	electromagnet>Volt: 12
	Dol guentity and 12 00 12 00
difference> 1000s.: -	Del. quantity cm3/: 37.0043.00
Shutoff	+ > 1000s.: (32.5047.50)
electromagnet>Volt: 12	†
2nd speed 1/min: 1250	Shutoff electromagnet:
Charge press. hPa: -	†
[njqty. cm3/: 0.03.0 Z' -	├ Cut-in
difference> 1000s.: -	- >min voltage : 10.0
Shutoff -	Rated voltage : 12.0
electromagnet Volt: 12.0	+
	Mounting and assembly dimensions:
D-travel dif.measurement:	- The state of the
correttore anticipo iniezione (SV):	Designation
est speed 1/min: 1250	K mm: 3.63.8
Car auceu (700) (* 177)	, intr. i.lll.()

KF mm: KOT mm: 1.0...1.4 mm: MIKROSCH. XL mm: A=0.8...3.0 Ya mm: 37.6...41.6 Yb mm: 49.9...62.8

## Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end